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ABSTRACT

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RESPONSE GENERATION NORMS FOR VERBAL ANALOGIES

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University of Pittsburgh

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Abstract

Normative data were collected for the generation of responses to 150 incomplete verbal analogies. Two types of normative data are provided: (a) the probabilities associated with each response produced for each analogy base, and (b) the probabilities that initial responses represented the appropriate semantic relationship, with a division of analogies based on 12 semantic relationship classifications.

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Although intelligence and aptitude tests are a large part of the culture of our schools and society, relatively little work has been directed towards bridging the gap between the psychometric reliability and validity of such tests and the experimental analysis of cognitive processes. Recently, interest has been increasing in doing so, and this is reflected in the work of Hunt (e.g., Hunt, Frost, & Lunneborg, 1973; Hunt & Lansman, 1975), among others. Estes (1974) suggested that intelligence tests can be viewed as collections of cognitive tasks and analyzed as such. Experimental analysis of these tasks to identify their constituent components could lead to the development of tests designed to diagnose as well as to predict. Similarly, Glaser (1972) suggested that adaptive education projects require such diagnosis and that existing tests must be examined in order to determine the abilities that they reflect.

It is clear that a test's validity should be related to the types of cognitive processing demands it makes on the individual, but by itself the predictive success of a test tells us nothing about those processing demands. In order to conduct experiments in this area, it is first necessary to consider the tests on the basis of the types of items which they contain. Rarely does a test contain only one type of item. Instead, individuals are expected to perform on a wide variety of tasks, including vocabulary, series completion, arithmetic word problems,

analogies, etc. Obviously, these tasks do not all require the same skills or make the same cognitive processing demands on the individual. One of the most frequently appearing tasks is the analogy task involving either verbal, geometric, or numerical problems. One test (the Miller Analogies Test, 1970) consists entirely of verbal analogies.

When one first examines the verbal analogies found on standardized tests, it is apparent that the types of semantic relations within such items are crucial to solution. Spearman (1923) recognized this when he spoke of the eduction of relations as one of the three major stages in analogical reasoning. He spoke of this stage in the following way: "The mentally presenting of any two characters (simple or complex) tends to evoke immediately a knowing of relation between them" (p. 63). Gentile, Kessler, and Gentile (1969) conducted an experiment showing the importance of this process. They presented analogies for solution and found that providing a relation either facilitated or hindered performance depending upon whether the relation provided was correct or incorrect. Finally, Whitely (1976), following a line of research developed by Dawis and others (e.g., 1972, 1975), showed that the type of relation influenced performance on analogy tests, although this does not necessarily account for individual differences.

Spearman's second major stage in analogical reasoning consisted of the eduction of correlatives, which he described in the following way: "The presenting of any character together with a relation tends to evoke immediately a knowing of the correlative character" (1923, p. 91). In summarizing Spearman's work, it is possible to separate analogical reasoning into three components: (a) the apprehension of the terms of the analogy, (b) the eduction of the relation between the relevant terms, and (c) the eduction of the correlate, or fourth term of the analogy. Thus, an individual must read the item, find the relationship between the relevant terms, and then use that

relationship and the remaining term of the analogy to find the fourth term. This is a componential theory that fits well with the modern information-processing views on reasoning. Sternberg (1975) uses similar ideas to present and defend a more precise, experimentally founded componential theory of analogical reasoning.

This report presents normative data on the production of correlates by individuals faced with the task of supplying the fourth term of a series of incomplete verbal analogies. Two types of normative data are provided: (a) the probabilities associated with the production of specific responses, and (b) the probability of producing responses which represent the general semantic relation in the analogy base.

Materials and Procedures

The materials for this study consisted of 150 verbal analogies drawn from a variety of standardized intelligence and aptitude tests and test practice books. The analogies were chosen to be of medium difficulty for college students and in fact seemed to range from very easy to very difficult, with the bulk of the items falling in the middle range. The first three terms (the "base") of each analogy were typed on sheets of paper. Each analogy was followed by two blank spaces where the subjects were to write their responses. There were six pages of analogies, each with 25 items. These pages were ordered using a Latin-square design in order to minimize the possibility of order effects. The first page of each booklet contained instructions to the subject. The instructions told the subjects to generate two reasonable responses to complete each of the analogy items. The experimenter answered any questions that arose and the subjects were allowed to perform the task at their own rate. A total of 76 University of Pittsburgh undergraduates participated in the collection of the normative data.

Frequency Tables

The response distributions for each analogy are provided in Table 1. This table orders the analogies with respect to cumulative probabilities of the single most frequently generated response for each analogy. The table is divided by frequency ranges (90-100, 80-90, etc.) and each analogy base is presented together with each generated response and its associated probabilities. Each generated response has two probability values: (a) the probability based upon initial responses only, and (b) the cumulative probability based upon both initial and secondary responses. Low cumulative frequency responses (four total occurrences or less) are alphabetically listed following the more frequent responses. In addition, the number of different initial and secondary responses is also provided.

An analysis was also done based upon the assignment of individual analogy bases to one of twelve different semantic relation classifications: (a) function, (b) class member, (c) part-whole, (d) conversion, (e) property, (f) location, (g) part-whole (function), (h) order, (i) group, (j) cause-effect, (k) action-object, and (l) association. Each initial response for an analogy base was classified as either representative or non-representative of the appropriate semantic relation. Table 2 presents each of the semantic relation classifications and the definition(s) for each relation. The analogy bases representing a particular relation are ordered in terms of the frequency (and probability) with which the initial responses represented the appropriate semantic relation.

The 150 analogy bases listed in Tables 1 and 2 vary across a broad range with respect to the probability values associated with the single most dominant response and the probabilities of generating semantically appropriate responses. This variability is not restricted to analogies representing a particular type of semantic relationship

but extends across all 12 types of semantic relations. The data presented in Tables 1 and 2 should allow one to conduct studies of analogical reasoning whereby the type of semantic relation, relationship probability, and response probability can be controlled and systematically varied. The extent to which these factors contribute to errors and decision latency may be important in developing a model of verbal analogical reasoning that can be related to current semantic memory theory.

Table 1
Percentage of Subjects Generating Given Responses
(First Response and Cumulative)

		1st Response	Cumulative	# Different Answers
<u>90%-100% Range</u>				
1.	Infant:Adult::Kitten:			
	Cat	96.1	(100.0)	1st Resp. = 4
	Tiger	.0	(15.8)	2nd Resp. = 16
	Feline	.0	(13.2)	
	Lion	.0	(10.5)	
	Adult	1.3	(7.9)	
	Mother	1.3	(7.9)	
	Tomcat	1.3	(6.6)	
2	Baby, Grown, Parent, Pet, Pussy			
1	Animal, Dog, Full grown, Mature, Mountain lion, Small			
2.	Baby:Mother::Kitten:			
	Cat	94.7	(100.0)	1st Resp. = 4
	Mother	2.6	(23.7)	2nd Resp. = 18
	Tiger	.0	(11.8)	
	Lion	.0	(10.5)	
	Feline	.0	(10.5)	
3	Dog, Female			
2	Animal, Parent, Pussy			
1	Adult, Baby, Child, Eat, Milk, Owner, Panther, Pet, Tomcat, ♀			
3.	Dime:Silver::Penny:			
	Copper	98.7	(98.7)	1st Resp. = 2
	Metal	.0	(13.2)	2nd Resp. = 26
	Brown	.0	(11.8)	
	Money	.0	(10.5)	
	Steel	.0	(9.2)	
	Brass	.0	(7.9)	
4	Bronze			
3	Nickel			
2	Gold			
1	Alloy, Aluminum, Cent, Cheaper, Coin, Copper-bronze, Dark-colored, Empty, Green, Lead, Lincoln, Mineral, Orange, Round, Semi-precious metal, Shining, Smaller, Spend, Zinc			

	1st Response	Cumulative	# Different Answers
4. Summer:Heat::Winter			
Cold	96.1	(98.7)	1st Resp. = 4
Freeze	.0	(22.4)	2nd Resp. = 16
Snow	.0	(17.1)	
Chill	.0	(13.2)	
Ice	.0	(7.9)	
Cool	1.3	(6.6)	
4 Frost, Wind			
2 Frigid, Frozen			
1 Air conditioning, Bitter, Colder, Dryness, Mild, No heat, Season, Winter			
5. Clock:Time::Thermometer:			
Temperature	94.7	(98.7)	1st Resp. = 5
Heat	1.3	(35.5)	2nd Resp. = 18
Degrees	.0	(21.1)	
Weather	1.3	(11.8)	
3 Fever			
2 Coldness, Fahrenheit, Warmth			
1 Body heat, Hands, High, Measure, Mercury, Outdoors, Reading, Scale, Sick, Time, Variability			
6. Caterpillar:Butterfly::Tadpole:			
Frog	90.8	(98.7)	1st Resp. = 8
Toad	1.3	(50.0)	2nd Resp. = 20
Fish	1.3	(7.9)	
3 Amphibian, Reptile			
2 Baby, Bullfrog			
1 Adult, Animal, Catfish, Dolphin, Egg, Fly, Frog-leapers, Green, Guppy, Insect, Life, Lizard, Minnow, Same, Ugliness			
7. Dresser:Drawer::Bookcase:			
Shelf	92.1	(97.4)	1st Resp. = 4
Books	3.9	(31.6)	2nd Resp. = 29
Ledge	.0	(6.6)	
3 Cabinet, Cupboard			
2 Bookend, Clothes, Dividers, Door, Drawer, Layer, Library, Rack, Row			
1 Closet, Compartments, Container, Counter, Cubbyhole, Desk, Dust, File, Place, Research, Sections, Stock, Storage, Unit			

	1st Response	Cumulative	# Different Answers
8. Second:Minute::Minute:			
Hour	94.7	(96.1)	1st Resp. = 5
Day	.0	(64.5)	2nd Resp. = 9
Time	1.3	(6.6)	
4 60 minutes			
3 Half-hour, Second			
1 Clock, Degree, Fraction, Half-minute, Unit			
9. Ear:Hear::Eye:			
See	93.4	(96.1)	1st Resp. = 4
Look	.0	(17.0)	2nd Resp. = 22
Sight	3.9	(15.8)	
Visualize	.0	(13.2)	
Vision	.0	(13.2)	
Observe	.0	(6.6)	
4 Perceive, Visual			
2 Lid, View			
1 Blindness, Blink, Comprehend, Detect, Focus, Glasses, Listen, Noticing, Reception, Retina, Saw, Sense, Watch			
10. Food:Hunger::Water:			
Thirst	93.4	(96.1)	1st Resp. = 4
Dryness	.0	(13.2)	2nd Resp. = 23
Dry	.0	(13.2)	
Dehydration	.0	(10.5)	
Drink	.0	(10.5)	
Drought	.0	(6.6)	
Quench	.0	(6.6)	
4 Thirsty			
3 Need			
2 Desert, Parch, Parchedness, Wet			
1 Bath, Bathe, Die, Drink, Dry throat, Emaciation, Ice, Life, Parchment, River, Sandwich, Swimming pool			
11. Wolves:Pack::Cattle:			
Herd	94.7	(94.7)	1st Resp. = 5
Group	.0	(36.8)	2nd Resp. = 21
Flock	1.3	(9.2)	
Bunch	.0	(9.2)	
4 Ranch			
3 Pack, Team			
2 Barn, Cow, Pasture, Range			
1 Animals, Beef, Crowd, Doggies, Drive, Drove, Gathering, Graze, North Carolina State, Roam, Slew, Stock, Swarm			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
12. Water:Drink::Bread:			
Eat	93.4	(94.7)	1st Resp. = 6
Chew	1.3	(28.9)	2nd Resp. = 26
Food	1.3	(14.5)	
Consume	.0	(14.5)	
3 Devour			
2 Bake, Butter, Crust, Drink, Feed, Munch, Swallow			
1 Bite, Break, Digest, Engulf, Fattening, Fill, Flour, Gulp, Hunger, Intake, Pay, Sandwich, Slice, Starch, Wheat			
13. Biology:Science::Sculpture:			
Art	92.1	(94.7)	1st Resp. = 7
Culture	.0	(10.5)	2nd Resp. = 38
Fine Art	1.3	(6.6)	
Skill	.0	(6.6)	
3 Aesthetics, Carve, Hobby, Painting, Science			
2 Architecture, Artist, Beauty, Craft, Create, Expression, Humanities, Imagination, Paint, Statue			
1 Anatomy, Class, Creativity, Construct, Design, Discipline, Entertainment, Feeling, Laboratory, Mold, Occupation, Personal, Portrait, Profession, Stone, Studio, Studio art, Study, Talent			
14. Finger:Hand::Hair:			
Head	86.8	(94.7)	1st Resp. = 5
Scalp	7.9	(27.6)	2nd Resp. = 25
Body	2.6	(21.1)	
Skin	1.3	(9.2)	
4 Wig			
3 Legs			
2 Face, Neck, Skull, Strand			
1 Animal, Arms, Bear, Braid, Comb, Cover, Crown, Dan- druff, Gland, Hairs, Hide, Many, Mind, Projection, Touch			
15. Arm:Elbow::Leg:			
Knee	93.4	(93.4)	1st Resp. = 5
Ankle	.0	(34.2)	2nd Resp. = 11
Joint	1.3	(28.9)	
Foot	1.3	(7.9)	
Thigh	2.6	(6.6)	
Calf	.0	(6.6)	
4 Hip			
1 Angle, Appendage, Bend, Knee cap, Muscles, Shin			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
16. Drift:Snow::Dune:			
Sand	92.1	(93.4)	1st Resp. = 5
Dirt	.0	(17.0)	2nd Resp. = 24
Desert	.0	(13.2)	
Beach	.0	(10.5)	
4 Dust			
3 Hill, Salt			
2 Gravel, Mud			
1 Bar, Blow, Bubbly, Buggy, Cloud, Cold, Earth, Grain, Land, Particles, Pile, Rain, Rainy, Sand, Sea, Soil, Storm, Trailer, Water, Weather			
17. Handle:Hammer::K:ob:			
Door	92.1	(93.4)	1st Resp. = 7
Drawer	1.3	(11.8)	2nd Resp. = 34
Cabinet	.0	(6.6)	
Radio	.0	(6.6)	
4 Turn, TV, Window			
3 Handle, Open, Wrench			
2 Entrance, Machine, Plane, Screwdriver			
1 Bar, Building, Button, Chest, Closet, Club, Computer, Construction, Control panel, Dial, Faucet, Gate, Hammer, Hang, Hill, Lathe, Lift, Lock, Pull, Saddle, Shutter, Switch, Twist			
18. Bray:Donkey::Bark:			
Dog	89.5	(93.4)	1st Resp. = 5
Tree	5.3	(15.8)	2nd Resp. = 29
Seal	.0	(14.5)	
Wolf	.0	(9.2)	
Animal	.0	(7.9)	
4 Coyote			
3 Puppy			
2 Collie, Hound, Hyena			
1 Ape, Ass, Baboon, Beagle, Bear, Bitch, Canine, Fox, Human, Kangaroo, Limb, Lion, Loud, Man, Mice, Monkey, Mouthpiece, Mutt, Muzzle, Noise, Oak, Person			
19. Leather:Calf::Wool			
Sheep	68.4	(93.4)	1st Resp. = 6
Lamb	26.3	(57.9)	2nd Resp. = 17
Goat	1.3	(7.9)	
Ewe	.0	(6.6)	
3 Sweater			
2 Goats			
1 Alpaca, Coat, Cotton, Head, Knitting, Llama, Neck, Poodle, Ram, Soft, Suede, Warm, Yarn			

	1st Response	Cumulative	# Different Answers
20. Granery:Wheat::Library			
Books	88.2	(92.1)	1st Resp. = 9
Magazines	.0	(15.8)	2nd Resp. = 32
Knowledge	2.6	(9.2)	
Shelves	1.3	(7.9)	
Information	.0	(6.6)	
4 Journals			
3 Papers, Periodicals, Reference, Research			
2 Films, Novels, Pages, School, Studies			
1 Bindery, Card, Corn, Dictionary, Document, Editions, Ency- clopedia, Index cards, Intellect, Librarian, Literature, Maps, Material, People, Read, Reading room, Records, Students, Think, Thought, Understanding, Words			
21. Quarrel:Enemy::Agree:			
Friend	88.2	(92.1)	1st Resp. = 10
Ally	1.3	(14.5)	2nd Resp. = 35
Comrade	.0	(7.9)	
4 Associate, Lover, Partner			
3 Buddy, Companion, Pal, Peer			
2 Acquaintance, Brother, Colleague, Disagree, Elder, Mate			
1 Accomplice, Accord, Argue, Common idea, Company, Com- patible, Consent, Conversant, Correspondent, Family, Fight, Friendship, Harmony, Husband, Mutual, Mutual consent, Neighbor, Nice people, Person, Reconcile, Rela- tive, Similar, Understand			
22. Fish:Fin::Bird:			
Wing	80.3	(92.1)	1st Resp. = 6
Feather	13.2	(43.4)	2nd Resp. = 12
Tail	1.3	(22.4)	
Beak	.0	(9.2)	
Fly	1.3	(7.9)	
4 Legs			
2 Feet, Flight, Lung			
1 Arm, Flap, Nest, Spread, Water			
23. Man:Home::Bird:			
Nest	77.6	(92.1)	1st Resp. = 5
Tree	17.1	(68.4)	2nd Resp. = 14
Bird house	1.3	(13.2)	
Cage	.0	(6.6)	
3 Home, Sky			
1 Build, Coop, Duck, Dwelling, Eagle, Feathers, Fly, Hole, Water, Woman			

	1st <u>Response</u>	<u>Cumulative</u>	# Different <u>Answers</u>
24. Draw:Picture::Sing:			
Song	88.2	(90.8)	1st Resp. = 6
Music	5.3	(23.7)	2nd Resp. = 25
Melody	.0	(22.4)	
Tune	.0	(14.5)	
Aria	.0	(7.9)	
4 Notes			
2 Concert, Lullabye			
1 Ballad, Cantata, Choir, Chorus, Glass, Hymn, Lyrics, Opera, Performance, Rhythm, Scream, Sketch, Sound, Story, Verse, Vocalize, Voice, Words			
25. Banana:Bunch::Fish:			
School	86.8	(90.8)	1st Resp. = 9
Group	3.9	(34.2)	2nd Resp. = 26
Pack	.0	(9.2)	
4 Bunch, Swarm			
3 Net, Swim			
2 Aquarium, Flock, Herd, Pair, Sea, Water			
1 Bow, Bucket, Bundle, Can, Catch, Cloud, Food, Hook, Large, Many, Pond, Pound, Run, String, Tear, Together, Yellow			
26. Moon:Earth::Earth:			
Sun	84.2	(90.8)	1st Resp. = 9
Planets	2.6	(17.1)	2nd Resp. = 20
Universe	1.3	(14.5)	
Mars	3.9	(11.8)	
Solar system	1.3	(10.5)	
Star	.0	(10.5)	
Moon	1.3	(7.9)	
Jupiter	1.3	(6.6)	
4 Galaxy			
2 Axis, Milky Way			
1 Atmosphere, Cosmos, Mercury, Orbit, Rotation, Round, Saturn, Sol, Space, Venus, World			

	1st Response	Cumulative	# Different Answers
<u>80%-90% Range</u>			
27. Rain:Drop::Snow:			
Flake	81.6	(89.5)	1st Resp. = 9
Fall	6.6	(26.3)	2nd Resp. = 26
Flurry	2.6	(13.2)	
Crystal	.0	(10.5)	
Particle	.0	(6.6)	
4 Drift			
3 Float			
2 Blizzard, Cold, Drop, Lays, Piece, Storm, White			
1 Ball, Descend, Dumps, Gently falls, Hail, Ice, Morsel, Patches, Ppt., Shoulder, Snowball, Speck, Suet, Winter			
28. Wolf:Dog::Tiger:			
Cat	73.7	(89.5)	1st Resp. = 7
Lion	17.1	(35.5)	2nd Resp. = 17
Feline	1.3	(21.1)	
Kitten	2.6	(18.4)	
2 Animal, Cougar, Cub, Lioness			
1 Bobcat, Cheetah, Dog, Domesticated, Jaguar, Lamb, Mouse, Ocelot, Puma, Striped, Tom			
29. Human being:Arm::Tree:			
Branch	59.2	(89.5)	1st Resp. = 7
Limb	26.3	(46.1)	2nd Resp. = 12
Leaf	3.9	(30.3)	
Trunk	5.3	(9.2)	
Root	1.3	(6.6)	
Twig	.0	(6.6)	
4 Bough			
3 Stern			
1 Bark, Body, Leg, Shrub, Torso			
30. Calf:Cow::Cub:			
Bear	77.6	(88.2)	1st Resp. = 7
Lion	14.5	(52.6)	2nd Resp. = 17
Wolf	2.6	(10.5)	
Tiger	1.3	(10.5)	
Animal	.0	(6.6)	
3 Scout			
2 Dog, Grizzly, Fox			
1 Adult, Baby, Boy Scout, Leopard, Old, Panda, Puppy, Seal, Whale, Young			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
31. Antler:Deer::Tusk:			
Elephant	76.3	(88.2)	1st Resp. = 9
Walrus	10.5	(35.5)	2nd Resp. = 20
Rhino	1.3	(19.7)	
Boar	3.9	(10.5)	
Ivory	.0	(6.6)	
2 Horn, Mammoth, Mastodon, Seal, Wild pig			
1 Antelope, Bear, Bull, Cattle, Cub, Dinosaur, Goat, Hippo, Moose, Pig, Protection, Tooth, Unicorn, Whale			
32. Biology:Microscope::Astronomy:			
Telescope	86.6	(86.6)	1st Resp. = 6
Stars	3.9	(18.4)	2nd Resp. = 25
Binoculars	1.3	(17.1)	
Sky	1.3	(9.2)	
Eyes	.0	(6.6)	
4 Observatory			
3 Radar			
2 Charts, Lens			
1 Calculate, Camera, Conservatory, Discovery, Heaven, Maps, Mirrors, Moon, Morphoscope, Planets, Radiotelescope, Refractor, Satellite, Science, Sight, Spaceship, Stargazing, Study, View			
33. Food:Man::Gasoline:			
Car	82.9	(86.8)	1st Resp. = 7
Truck	.0	(31.6)	2nd Resp. = 20
Engine	6.6	(17.1)	
Automobile	5.3	(10.5)	
Machine	1.3	(9.2)	
Vehicle	.0	(7.9)	
Airplane	.0	(7.9)	
3 Boat			
2 Bus, Fuel, Petroleum, Tank			
1 Bike, Explode, Feeding, Fire, Grass cutter, Jet, Motor, Motorcycle, Move, Oil, Water			
34. Paragraph:Sentence::Sentence:			
Word	69.7	(86.8)	1st Resp. = 9
Phrase	18.4	(47.4)	2nd Resp. = 25
Clause	1.3	(9.2)	
Letter	1.3	(7.9)	
3 Noun, Punctuation			
2 Line, Meaning, Statement, Story, Subject, Syllable, Verb			
1 Fragment, Grammar, Life, Page, Paper, Parts, Period, Phoneme, Predicate, Symbols, Thought			

	1st Response	Cumulative	# Different Answers
35. Hat:Head::Roof:			
House	76.3	(85.5)	1st Resp. = 11
Building	5.3	(40.8)	2nd Resp. = 23
Home	1.3	(9.2)	
Car	1.3	(7.9)	
4 Chimney, Shelter, Walls			
2 Barn, Shungies			
1 Antenna, Apartment, Attic, Boat, Ceiling, Contractor, Cover, Covering, Garage, Hair, Head, People, Rain, Roof, Slate, Structure, Top			
36. Flower:Bush::Fruit			
Tree	76.3	(85.5)	1st Resp. = 13
Vine	3.9	(19.7)	2nd Resp. = 25
Bush	1.3	(19.7)	
Plant	1.3	(11.8)	
Vegetable	3.9	(6.6)	
4 Apple			
3 Orchard			
2 Bunch, Seed			
1 Blossom, Berry, Core, Earth, Evergreen, Flower, Garden, Grocery store, Grove, Hedge, Nut, Nutritious, Oranges, Patch, Pretty, Prune, Seed, Shrubbery, Shrubs, Stem, Supermarket, Vineyard, Yellow			
37. Horse:Hoof::Man:			
Foot	71.7	(85.5)	1st Resp. = 9
Shoe	3.9	(27.6)	2nd Resp. = 15
Toe	.0	(18.4)	
Feet	13.2	(17.1)	
Heel	.0	(9.2)	
Toenail	3.9	(6.6)	
Sole	.0	(6.6)	
3 Hand, Head			
2 Leg, Walk			
1 Adult, Callous, Fingers, Male, Neck, Ride, Woman			
38. Sail:Cloth::Oar:			
Wood	84.2	(84.2)	1st Resp. = 8
Metal	.0	(31.6)	2nd Resp. = 19
Plastic	.0	(13.2)	
Boat	2.6	(10.5)	
Fiberglass	.0	(9.2)	
Aluminum	.0	(7.9)	
4 Row			
3 Canoe, Paddle, Tree			
2 Oak			
1 Balsa, Bark, Cheese, Cotton, Manipulator, Mast, Material, Paint, Ship, Stick, Swim, Vinyl			

	1st Response	Cumulative	# Different Answers
39. Rose:Plant::Lion:			
Animal	77.6	(84.2)	1st Resp. = 9
Mammal	.0	(18.4)	2nd Resp. = 28
Cat	5.3	(15.8)	
Feline	6.6	(14.5)	
Beast	1.3	(13.2)	
3 Cat family, Tiger			
2 Carnivore, Jungle, King			
1 Being, Breed, Cage, Creature, Cub, Den, Ferocious, Fierce, Green, Human being, Hunter, Kingdom, Lioness, Mule, Meat, Powerful, Predator, Pride, Primate, Red, Roar, Type			
40. Coffee:Caffeine::Tobacco:			
Nicotine	73.7	(84.2)	1st Resp. = 6
Tar	10.5	(65.8)	2nd Resp. = 16
Cigarette	9.2	(10.5)	
4 Cigar, Pipe, Smoke			
3 Cancer, Leaves			
1 Alkaloid, Bad breath, Drink, Drug, Heart, Kill, Lead, Plants, Speedy, Stimulant			
41. Fin:Fish::Propeller:			
Plane	53.9	(84.2)	1st Resp. = 9
Boat	25.0	(46.1)	2nd Resp. = 19
Helicopter	9.2	(22.4)	
Ship	5.3	(13.2)	
4 Submarine			
3 Motor			
2 Aircraft, Jet, Wing			
1 Air, Blades, Car, Fly, Motorboat, Project, Speedboat, Start, Swim, Toy, Turn			
42. Ink:Pen::Paint:			
Brush	80.3	(82.9)	1st Resp. = 10
Can	6.6	(15.8)	2nd Resp. = 28
Roller	.0	(13.2)	
Finger	1.3	(10.5)	
Spray gun	.0	(9.2)	
Canvas	2.6	(7.9)	
Wall	2.6	(6.6)	
Picture	.0	(6.6)	
3 Color, Easel, Palette			
2 Jar, Knife			
1 Art, Bucket, Container, Draw, Drawings, Grumbacher #4, House, Ladder, Oil, On, Pail, Painter, Painting, Paper, Pen, Room, Stick, Water, Write			

	1st <u>Response</u>	<u>Cumulative</u>	# Different <u>Answers</u>
43. Green:Emerald::Red:			
Ruby	80.3	(82.9)	1st Resp. = 12
Stone	1.3	(11.8)	2nd Resp. = 32
Garnet	.0	(11.8)	
Sapphire	3.9	(10.5)	
Rose	2.6	(6.6)	
4 Gem			
3 Amethyst, Fire, Fire engine, Jewel			
2 Apple, Blood, Brick, Jade, Maroon			
1 Bloodstone, BiJe, Brimstone, Carbonate, Cherry, Cinnamon, Coral, Diamond, Ebony, Flower, Gray, Magenta, Opal, Orange, Pink, Rock, Rosy, Scarlet, Stoplight, Topaz, Violet, Wine			
44. Pig:Pork::Steer:			
Beef	75.0	(82.9)	1st Resp. = 7
Steak	10.5	(42.1)	2nd Resp. = 19
Meat	3.9	(18.4)	
Cow	6.6	(10.5)	
Roast	.0	(6.6)	
3 Bull			
2 Cattle, Chops, Chuck, Liver, Veal			
1 Calf, Can, Delicacy, Direction, Fat, Food, Hamburger, Mutton, Ribcage, Swine, Tongue			
45. Vehicle:Automobile::Weapon:			
Gun	69.7	(82.9)	1st Resp. = 12
Knife	11.8	(57.9)	2nd Resp. = 15
Rifle	3.9	(10.5)	
Sword	.0	(10.5)	
3 Artillery			
2 Deadly, Defense, Pistol, Spear			
1 Arms, Army, Attack, BB gun, Dagger, Harm, Shotgun, Slingshot, Tank, Tongue, .45			
46. Man:Skin::Animal:			
Fur	64.5	(82.9)	1st Resp. = 9
Hide	15.8	(36.8)	2nd Resp. = 16
Skin	11.8	(19.7)	
Hair	.0	(14.5)	
Coat	3.9	(6.6)	
Feathers	1.3	(6.6)	
4 Pelt			
1 Carcass, Covering, Dog, Flesh, Jaws, Leather, Mink, Protection, Scales, Teeth, Warmth, Woman			

	1st Response	Cumulative	# Different Answers
47. Bark:Dog::Roar:			
Lion	76.3	(80.3)	1st Resp. = 11
Tiger	.0	(39.5)	2nd Resp. = 25
Horse	9.2	(11.8)	
Bear	1.3	(7.9)	
4 Elephant			
2 Cougar, Crowd, Leopard, Ocean			
1 Angus, Baby, Beast, Bronco, Bull, Butt, Cat, Child, Colt, Cow, Donkey, End, Entrance, Ferocious, Garage, Man, Panther, Person, Sea, Speaker, Steer, Whisper, Wind			
48. Seed:Plant::Egg:			
Chicken	71.1	(80.3)	1st Resp. = 14
Bird	6.6	(30.3)	2nd Resp. = 26
Animal	3.9	(13.2)	
Hen	2.6	(11.8)	
4 Duck, Goose			
3 Hatch, Yo,k			
2 Baby, Breakfast, Fertilize, Fish, Human, Rooster			
1 Body, Cake, Chick, Child, Embryo, Female, Follicle, Fry, Incubate, Insect, Mammal, Maturity, Ostrich, Plant, Reptile, Sea animal, Snake, White, Zygote			

70%-80% Range

49. Man:Omnivorous::Lion:			
Carnivorous	75.0	(78.9)	1st Resp. = 13
Meat-eater(ing)	.0	(36.8)	2nd Resp. = 23
Meat	2.6	(10.5)	
Omnivorous	1.3	(6.6)	
3 Flesh-eating			
2 Animal, Tiger, Strong, Vegetarian			
1 Aggressor, Attack, Bad, Benevolent, Confused, Deadly, Eat, Fierce, Ferocious, Flesh, Grow, Herbivorous, Indifferent, Jump, Killer, Liberal, Lioness, Man- eating, People, Powerful, Predator, Woman			

	1st Response	Cumulative	# Different Answers
50. Chicken:Egg::Plant:			
Seed	68.4	(78.9)	1st Resp. = 10
Pollen	9.2	(15.8)	2nd Resp. = 37
Flower	6.6	(13.2)	
Root	3.9	(10.5)	
Fruit	3.9	(9.2)	
Sprout	.0	(6.6)	
4 Bulb, Spore, Stem			
3 Bud, Food			
2 Grow, Leaf, Seedling			
1 Air, Bird, Blossom, Bush, CO ₂ , Crossbreed, Foliage, Gamete, Good, Green, Greenhouse, Ground, Growth, Nourishment, Petal, Pit, Pot, Reproduction, Rose, Shoot, Soil, Starting, Vegetable, Vitamin, Water			
51. Train:Rail::Automobile:			
Road	56.6	(78.9)	1st Resp. = 6
Highway	14.5	(48.7)	2nd Resp. = 14
Street	10.5	(23.7)	
Tires	11.8	(19.7)	
Wheels	8.9	(9.2)	
2 Concrete			
1 Cement, Double yellow lines, Engine, Garage, Parkway, Pavement, Steering wheel, Tracks, Turnpikes			
52. Book:Chapter::Play:			
Act	52.6	(78.9)	1st Resp. = 10
Scene	35.5	(77.6)	2nd Resp. = 16
4 Part			
2 Child, Curtain, Episode, Section, Segment, Skit			
1 Actors, Collection, Epilogue, Game, Intermission, Library, Piece, Prologue, Read, Role, Script, Sequel, Sitting, Toy			
53. Pistol:Rifle::Hatchet:			
Axe	72.4	(77.6)	1st Resp. = 15
Saw	2.6	(26.3)	2nd Resp. = 29
Knife	5.3	(10.5)	
Tomahawk	2.6	(6.6)	
Sword	2.6	(6.6)	
Machete	1.3	(6.6)	
4 Hammer			
3 Blade, Scythe			
2 Gun, Pick			
1 Block, Bludgeon, Busy, Chainsaw, Chop, Club, Dagger, Fire, Guillotine, Hacksaw, Hard, Handle, Holder, Kill, Knife-like, Large, Longer, Pick-axe, Shovel, Sickle, Skull, Sledge, Spade, Weapon			

	1st Response	Cumulative	# Different Answers
54. Gun:Shoots::Knife:			
Cuts	40.8	(76.3)	1st Resp. = 8
Stabs	44.7	(59.2)	2nd Resp. = 18
Slices	3.9	(18.4)	
Wounds	2.6	(9.2)	
3 Carves, Kills, Slashes			
2 Jabs, Punctures			
1 Blade, Hurts, Pierces, Rips, Scrapes, Severs, Sharp, Shears, Splits, Thrown			
55. Week:Month::Day:			
Week	67.1	(75.0)	1st Resp. = 5
Hour	18.4	(28.9)	2nd Resp. = 14
Year	11.8	(26.3)	
Month	.0	(19.7)	
Minute	.0	(15.8)	
Night	1.3	(6.6)	
Fortnight	.0	(6.6)	
2 Decade			
1 Calendar, Date, Leap, Period, Weekend, 4 days, 7 days			
56. Forest:Tree::Garden:			
Flower	53.9	(75.0)	1st Resp. = 10
Plant	31.6	(53.9)	2nd Resp. = 19
Vegetable	3.9	(26.3)	
4 Shrub			
3 Bushes, Tomatoes			
2 Grass, Plot, Weeds			
1 Food, Garden, Gibbous, Green, Landscape, Lawn, Lettuce, Lilies, Nature, Potato, Roses, Tulip, Variety, Worms			
57. Water:Fluid::Iron:			
Solid	61.8	(73.7)	1st Resp. = 10
Metal	23.7	(46.1)	2nd Resp. = 26
Hard	1.3	(14.5)	
Steel	5.3	(13.2)	
Ore	.0	(5.3)	
3 Liquid			
2 Cold			
1 Building, Chemical, Conglomerate, Door, Dry, Durable, Flow, Framework, Heavy, Malleable, Mass, Mineral, Molten, Non- amorphous, Rigid, Rusty, Ships, Solidified, Stiff, Stone, Strong, Thick, Unflowing, Wet			

	1st Response	Cumulative	# Different Answers
58. Hammer::Nail::Wrench:			
Bolt	47.4	(73.7)	1st Resp. = 10
Screw	28.9	(43.4)	2nd Resp. = 16
Nut	7.9	(32.9)	
Pipe	6.6	(17.0)	
2 Pliers, Socket, Tighten			
1 Axe, Faucet, Grasp, House, Joint, Nail, Plumber, Spark plug, Tubing, Twist, Valve, Washer, Work, Wrench			
59. Fence:Gate::House:			
Door	69.7	(72.4)	1st Resp. = 14
Window	1.3	(47.4)	2nd Resp. = 27
Home	9.2	(11.8)	
Entrance	.0	(7.9)	
Roof	2.6	(6.6)	
4 Apartment, Building			
3 Yard			
2 Garage, Porch			
1 Block, Brick, Castle, Chimney, City, Cottage, Doorknob, Doorway, Driveway, Dwelling, Fire escape, Floors, Frame, Gate, Handle, Land, Live, Lot, Picket, Protection, Resi- dence, Walls, Wooden			
60. Horse:Herd::Mountain:			
Range	67.1	(72.4)	1st Resp. = 12
Chain	11.8	(17.1)	2nd Resp. = 37
Group	.0	(11.8)	
Mountains	2.6	(7.9)	
Hills	.0	(6.6)	
4 Area			
3 Cluster, Peaks, Valley			
2 Appalachians, Climb, Goat, Ridge, Rocks, Rockies			
1 Alps, Background, Barrier, Bird, Cats, Cliffs, Climber, Complex, Crest, Divide, Formations, Geography, Height, High, Land, Landscape, Link, Lion, Nut, Plateau, Prairie, Ride, Run, Set, Snow, String, System, Top			
61. Drum:Stick::Violin:			
Bow	65.8	(72.4)	1st Resp. = 12
String	10.5	(43.4)	2nd Resp. = 22
Fingers	.0	(9.2)	
Stick	2.6	(6.6)	
4 Fiddle, Horsehair, Music, Pick			
3 Resin			
1 Arms, Beat, Blade, Catgut, Cello, Chord, Cord, Cue, Hair, Hand, High noise, Instrument, Key, Orchestra, Piece, Play, Shaft, Sound			

	1st Response	Cumulative	# Different Answers
62. Gander:Goose::Sow:			
Pig	63.2	(72.4)	1st Resp. = 13
Hog	6.6	(34.2)	2nd Resp. = 26
Cow	6.6	(11.8)	
4 Pork			
3 Animal, Boar, Calf			
2 Piglet, Reap, Swine			
1 Bull, Cat, Cattle, Chicken, Dog, Female, Fly, Girl, Harvest, Hen, Hippo, Man, Mother, Oink, Plant, Plod, Pregnant, Ram, Seed, Sown, Walrus			
63. Bird:Feathers::Fish:			
Scales	56.6	(72.4)	1st Resp. = 4
Fins	36.8	(65.8)	2nd Resp. = 13
Gills	5.3	(22.4)	
Skin	.0	(13.2)	
3 Swim			
2 Flippers, Tail, Water			
1 Covering, Flaps, Flock, Hide, Slime, Together			
64. Bird:Fish::Airplane:			
Boat	46.1	(72.4)	1st Resp. = 12
Submarine	26.3	(50.0)	2nd Resp. = 21
Ship	2.6	(21.1)	
Car	10.5	(11.8)	
3 Fly, Train			
2 Automobile, Helicopter, Truck, Vessel, Wings			
1 Barge, Cockpit, Dress Engine, Frog, Fuel, Gasoline, Glide, Hydroplane, Ocean liner, Plane, Pilot, Scuba diver, Sore, Swim			
65. Butter:Bread::Sugar:			
Coffee	50.0	(71.1)	1st Resp. = 12
Tea	17.1	(44.7)	2nd Resp. = 20
Cereal	21.1	(40.8)	
3 Cookies			
2 Cake, Candy, Cream, Donuts, Flour, Fruit, Grapefruit, Salt,			
1 Bread, Cocoa, Cornflakes, Food, Liquid, Milk, Pie, Spice, Sweet, Toaster, Water			

	1st Response	Cumulative	# Different Answers
<u>60%-70% Range</u>			
66. TV:Radio::Visual:			
Audial(io)	67.1	(69.7)	1st Resp. = 12
Hear(ing)	14.5	(36.8)	2nd Resp. = 23
Sound	2.6	(19.7)	
Listen(ing)	1.3	(14.5)	
4 Auditory, Ear			
3 Stereo			
2 Aural, Communication, Eyes, Non-visual, See, Sight			
1 Audible, Camera, Dial, Heard, Look, Magazine, Magnifying glass, Movie, Noise, Picture, Seeing, Senses, Sightless, Touch, TV, Watch			
67. Oat:Bushel::Diamond:			
Carat	63.2	(69.7)	1st Resp. = 18
Ring	5.3	(15.8)	2nd Resp. = 34
Mine	6.6	(11.8)	
Weight	.0	(7.9)	
4 Necklace, Rock			
3 Grams, Size			
2 Bundle, Cut, Glass, Money, Value			
1 Bagful, Brooch, Bushel, Cache, Case, Casing, Care, Cluster, Coal, Collection, Cow, Facets, Gem, Grass, Hard, Jewel box, Jewels, Keg, Lot, Lots, Milligram, Ounce, Peck, Safe, Shiny, Shovelful, Sparkle, Stone, Vein, Wheat, 14			
68. House:Man::Tree:			
Bird	52.6	(68.4)	1st Resp. = 19
Squirrel	9.2	(32.9)	2nd Resp. = 30
Monkey	10.5	(23.7)	
Forest	7.9	(9.2)	
4 Chipmunk			
3 Ape, Nest, Woods			
2 Green, Insects, Leaves, Trunk			
1 Animals, Apples, Beaver, Book, Bounceable, Branch, Bugs, Dog, Earth, Giraffe, Ground, Jungle, Landscape, Live, Locus, Nuts, Pliable, Raccoon, Robin, Runs, Sap, Woodpecker			

	^{1st} Response	Cumulative	# Different Answers
69. Man:Bread::Cattle:			
Grass	55.3	(67.1)	1st Resp. = 12
Grain	11.8	(23.7)	2nd Resp. = 23
Hay	7.9	(23.7)	
Corn	2.6	(15.8)	
Feed	3.9	(11.8)	
Oats	5.3	(10.5)	
Wheat	2.6	(6.6)	
Water	1.3	(6.6)	
3 Meat, Milk			
2 Alfalfa, Graze, Greenery			
1 Barley, Beef, Fields, Fodder, Pasture, Plants, Roam, Shrubs, Steer, Straw, Weeds, Woman			
70. Tears:Sorrow::Laughter:			
Joy	48.7	(67.1)	1st Resp. = 10
Happiness	32.9	(64.5)	2nd Resp. = 24
Happy	5.3	(13.2)	
Gaiety	2.6	(7.9)	
4 Fun, Smile			
3 Gladness			
2 Elation, Humor, Tears			
1 Clapping, Contentment, Cry, Funniness, Glad, Good times, Grin, Hysteria, Irony, Joyous, Mellow, Mirth, Pleasure, Short, Smiling, Spiritual, Warm			
71. Eat:Fat::Starve:			
Skinny	47.4	(67.1)	1st Resp. = 9
Thin	36.8	(64.5)	2nd Resp. = 23
Die	2.6	(11.8)	
Eat	6.6	(6.6)	
4 Malnourished			
3 Chew, Hunger			
2 Bones, Food, Hungry, Slim, Small, Undernourished			
1 Death, Emaciated, Engulf, Fat, Lose, Me, Obese, Overeat, Perish, Reduce, Shivel, Sick, Underweight			
72. Honey:Milk::Bee:			
Cow	64.5	(65.8)	1st Resp. = 11
Goat	.0	(43.4)	2nd Resp. = 25
Flower	11.8	(15.8)	
Honey	5.3	(9.2)	
Hive	2.6	(7.9)	
4 Bird, Sting			
3 Pollen			
2 Baby, Calf, Nectar			
1 Animal, Beetle, Bossy, Bread, Bug, Butter, Colony, Dairy farm, Lamb, Milk, Mothers, Sheep, Skim, Store, Sugar, Wasp			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
73. Ewe:Ram::Mare:			
Horse	50.0	(65.8)	1st Resp. = 13
Stallion	14.5	(22.4)	2nd Resp. = 22
Filly	11.8	(21.1)	
Colt	3.9	(14.5)	
Male	3.9	(13.2)	
Stud	3.9	(7.9)	
Pony	1.3	(7.9)	
Donkey	1.3	(6.6)	
4 Female			
2 Gelding, Maverick, Steed			
1 Adult, Animal, Baby, Black, Done, Foal, Goat, Herd Jackass, Mate, New, Skew			
74. Bookcase:Books::Cabinet:			
Dishes	47.4	(65.8)	1st Resp. = 21
Clothes	14.5	(23.7)	2nd Resp. = 27
Food	2.6	(13.2)	
Glasses	3.9	(9.2)	
Tools	2.6	(9.2)	
Cups	1.3	(6.6)	
4 China			
3 Files, Guns, Liquor, Shelves, Towels			
2 Junk, Medicine, Records, Utensils			
1 Awards, Bric-a-brac, Brooms, Chest, Closet, Cupboard, Dinnerware, Doors, Groceries, Household articles, Linens, Paper, Pots, Pottery, Read, Shoes, Silverware, Storage, Store, Trophies			
75. Prune:Raisin::Plum:			
Grape	57.9	(64.5)	1st Resp. = 12
Prune	13.2	(18.4)	2nd Resp. = 28
Fruit	1.3	(18.4)	
Date	6.6	(9.2)	
Peach	3.9	(9.2)	
Seed	3.9	(6.6)	
Dried	.0	(6.6)	
4 Apricot			
3 Orange, Pear			
2 Cherry, Juicy, Nectarine, Nut, Pit, Raisin			
1 Apple, Avocado, Builder, Concord, Eat, Nasty, Olive, Shriveled, Sow, Sweet, Tree, Vine, Wet, Wine			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
76. Lead:Cork::Sink:			
Float	57.9	(64.5)	1st Resp. = 23
Swim	1.3	(11.8)	2nd Resp. = 35
Bob	.0	(9.2)	
Rise	1.3	(6.6)	
Buoyancy	.0	(6.6)	
Light	.0	(6.6)	
4 Steel			
3 Bottle, Metal			
2 Copper, Drift, Fly, Iron, Pipes, Stopper, Stove, Wash			
1 Balloon, Basin, Bathtub, Board, Container, Cotton, Drain, Drown, Enamel, Faucet, Granite, Heavy, Hold-up, Kitchen, Metal, Ore, Oven, Platinum, Porcelain, Salvage, Shallow, Ship, Silk, Sponge, Stay, Stone, Tub, Wander, Water, Wood, Zinc			
77. Porpoise:Sea::Mole:			
Ground	53.9	(64.5)	1st Resp. = 13
Earth	18.4	(48.7)	2nd Resp. = 20
Land	9.2	(13.2)	
Hole	3.9	(13.2)	
Dirt	.0	(9.2)	
Underground	2.6	(6.6)	
3 Soil, Tunnel			
2 Face, Skin			
1 Animal, Back, Beaver, Bread, Burrow, Chipmunk, Dig, Gopher, Hand, Ocean, Opening, Rodent, Smart, Tree, Worm, Yard			
78. Red:Blue::Orange:			
Green	44.7	(64.5)	1st Resp. = 5
Yellow	39.5	(55.3)	2nd Resp. = 17
Purple	5.3	(21.1)	
Black	9.2	(13.2)	
Brown	.0	(7.9)	
Red	.0	(6.6)	
3 Color, White			
2 Lime green, Violet			
1 Chartreuse, Eat, Grape, Gray, Indigo, Lemon, Pink			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
79. Tooth:Gum::Eye:			
Socket	55.3	(63.2)	1st Resp. = 16
Lids	11.8	(28.9)	2nd Resp. = 31
Head	3.9	(21.1)	
Pupil	6.6	(7.9)	
Retina	3.9	(7.9)	
Face	1.3	(6.6)	
3 Ball, Optic nerve			
2 Brain, Brows, Cornea, Drops, Glasses, Lens, Muscles, See			
1 Area, Black, Cataract, Contact lens, Decay, Ear, Eyedrop, Eyelash, Forehead, Foreskull, Hole, Iris, Lashes, Liga- ment, Nerve, Optical cavity, Orbit, Skull, Tear, Water			
80. Muscle:Movement::Stomach:			
Digestion	51.3	(63.2)	1st Resp. = 20
Contraction	11.8	(18.4)	2nd Resp. = 36
Food	.0	(13.2)	
Growl	5.3	(10.5)	
Churn	7.9	(7.9)	
Hunger	3.9	(7.9)	
Eating	1.3	(7.9)	
3 Ache, Peristasis, Storage			
2 Dissolve, Grind, Movement, Pain, Upset			
1 Action, Bread basket, Conversion, Cramp, Devour, Eat, Elimination, Empty, Expansion, Fat, Filling, Good food, Gurgling, Hungry, Ingest, Metabolism, Nutrition, Relay, Secrete, Sound, Spasm, Stretch, Survival, Thirst			
81. Handkerchief:Linen::Dress:			
Cotton	47.4	(61.8)	1st Resp. = 14
Cloth	14.5	(21.1)	2nd Resp. = 27
Silk	7.9	(17.1)	
Clothing	9.2	(15.8)	
Material	6.6	(14.5)	
Polyester	2.6	(7.9)	
Wool	.0	(7.9)	
4 Fabric, Knit, Nylon			
3 Satin, Wardrobe			
1 Apparel, Body, Buttons, Chiffon, Denim, Jersey, Jersey material, Ladies, Linen, Man, Nose, Orlon, Permanent press, Rayon, Rags, Shirt, Shoes, Silk, Synthetic			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
82. Pulp:Paper::Hemp:			
Rope	51.3	(60.5)	1st Resp. = 21
String	.0	(13.2)	2nd Resp. = 35
Twine	2.6	(9.2)	
4 Cloth, Cord, Marijuana, Material, Plant, Tree, Wood			
3 Basket, Grass			
2 Drug, Herb, Pencil			
1 Bags, Beer, Brick, Bundle, Burlap, Clothes, Coat, Cotton, Do, Fabric, Fiber, Flower, Food, Joint, Mat, Mineral, Narcotic, Pack, Paper, Pen, Platinum, Pulp, Sandals, Sew, Slant, Strong, Tea, Textile, Thread, Twist, Weed			
83. Gasoline:Petroleum::Sugar:			
Cane	51.3	(60.5)	1st Resp. = 23
Beet	3.9	(10.5)	2nd Resp. = 40
Sweetener	6.6	(9.2)	
Sweet	3.9	(9.2)	
Saccharin	2.6	(6.6)	
Plant	.0	(6.6)	
4 Cake, Glucose			
3 Carbohydrates, Dextrose			
2 Candy, Cookie, Raw sugar, Salt, Starch, Sucrose, Syrup			
1 Blood, Calories, Carbon, Cell, Coffee, Crop, Cuba, Cube, Disaccharides, Doughnut, Energy, Good, Grains, Granules, Grass, Grown, Honey, Hydrogen, Jelly, Lactose, Leaves, Maple tree, Molasses, Oil, Refinery, Rough, South, Sub. sugar, Substitute, Sucaryl, Sun, Tea, Tree, Vitamin			
84. Square:Rectangle::Circle:			
Oval	46.1	(60.5)	1st Resp. = 17
Ellipse	18.4	(35.5)	2nd Resp. = 32
Round	6.6	(11.8)	
Oblong	5.3	(13.2)	
Sphere	6.6	(7.9)	
4 Octagon			
3 Cylinder			
2 Egg, Circumference, Line, Parabola, Semi-circle, Square, Triangle			
1 Arc, Ball, Bowl, Box, Circle, Concentric, Curve, Diameter, Donut, Dot, Football, Half-circle, Hexagon, Hyperbola, Large, Optigon, Ovoid, Paragon, Pear, Quadrangle, Rhombeledral, Ring, Shape, Small			

	1st Response	Cumulative	# Different Answers
85. Hydrogen:Gas::Uranium:			
Metal	44.7	(60.5)	1st Resp. = 14
Solid	18.4	(35.5)	2nd Resp. = 22
Ore	11.8	(18.4)	
Radioactive	1.3	(14.5)	
Mineral	7.9	(13.2)	
Element	2.6	(11.8)	
3 Gold			
2 Alloy, Lead, Rock			
1 Brass, Energy, Geiger counter, Isotope, Liquid, Metallic, Mine, Non-alloy, Oil, Oxygen, Platinum, Precious metal, Rich, Rock mineral, Shaped, Steady, Stone, West			

50%-60% Range

86. Mare:Filly::King:			
Queen	51.3	(57.9)	1st Resp. = 13
Prince	25.0	(34.2)	2nd Resp. = 26
Princess	3.9	(27.8)	
Wife	.0	(7.9)	
Son	1.3	(6.6)	
3 Female			
2 Duke, Heir, Knight, Mistress, Ruler, Squire			
1 Animal, Baby, Baron, Boy, Castle, Czar, Daughter, Die, Dominate, Emperor, Empress, Honor, Horse, Jack, Lady, Male, Man, Monarch, Servant, Slave, Style, Woman			
87. Necklace:Pearls::Chain:			
Links	48.7	(57.9)	1st Resp. = 18
Metal	5.3	(25.0)	2nd Resp. = 27
Gold	14.5	(23.7)	
Silver	5.3	(17.1)	
Medal	7.9	(7.9)	
4 Bracelet			
3 Diamonds, Medallion			
2 Beads, Charms, Circles, Fence, Iron, Key, Necklace, Pin			
1 Anchor, Ball, Belt, Captive, Choker, Connections, Fastened, Lose, Ornament, Pieces, Rings, Round, String, Trinkets, Watch, Wear, Wire			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
88. Boat:Dock::Airplane:			
Hangar	47.4	(57.9)	1st Resp. = 10
Airport	31.6	(65.8)	2nd Resp. = 23
Runway	6.6	(18.4)	
Land	3.9	(7.9)	
4 Field, Landing field			
2 Airstrip, Fly, Landing, Port, Station			
1 Cruise, Dock, Garage, Ground, Put down, Ramp, Shelter, Stretch, Tail, Taxi, Terminal, Tie-down, Tie-down ramp, Wings			
89. House:Nails::Dress:			
Thread	40.8	(57.9)	1st Resp. = 17
Stitches	15.8	(32.9)	2nd Resp. = 21
Seams	11.8	(21.1)	
Buttons	2.6	(11.8)	
Material	2.6	(9.2)	
Pins	5.3	(9.2)	
4 Cloth, Fabric, Zipper			
3 Wardrobe, Wear			
2 Needle, Sew, Sewing			
1 Cleats, Closet, Collar, Cotton, Fiber, Hem, Live, Pants, Pattern, Shirt, String, Store			
90. Cat:Dog::Tiger:			
Lion	46.1	(55.3)	1st Resp. = 12
Wolf	27.6	(38.2)	2nd Resp. = 29
Bear	7.9	(13.2)	
Leopard	.0	(9.2)	
Man	2.6	(7.9)	
Elephant	1.3	(6.6)	
4 Fox, Hyena			
3 Horse, Mouse, Panther, Zebra			
2 Animal, Coyote, Deer, German shepherd, Rhino			
1 Beast, Bird, Bobcat, Canine, Cat, Gorilla, Hound, Lamb, Rabbit, Shark, Sheep, St. Bernard, Striped, Tigress			

	1st Response	Cumulative	# Different Answers
91. Car:Brakes::Ship:			
Anchor	43.4	(55.3)	1st Resp. = 19
Rudder	15.8	(25.0)	2nd Resp. = 34
Engine	2.6	(9.2)	
Brake	5.3	(7.9)	
Sails	3.9	(7.9)	
Propeller	2.6	(6.6)	
4 Reverse			
3 Dock, Oars, Stop, Wind			
2 Drag, Lower sails, Motor, Wheel			
1 Ballast, Bolts, Coal, Cruise, Current, Flaps, Ocean, Paddle, Port, Powerless, Rope, Row, Sea, Sinker, Sinking, Steer, Steering, Stern, Storm, Tacking, Tail, Water, Waves, Yacht			
92. Razor:Sharp::Hoe:			
Dull	42.1	(55.3)	1st Resp. = 24
Blunt	9.2	(17.1)	2nd Resp. = 37
Sharp	7.9	(10.5)	
Pointed	5.3	(9.2)	
Dig	3.9	(9.2)	
4 Cut, Flat, Rake			
3 Garden, Heavy, Tool			
2 Cutting, Down, Pick, Smooth, Square, Strong			
1 Angular, Big, Blade, Chop, Deep, Digging, Edge, Farmer, Fire, Fork, Furrow, Hard, House, Long, Non-cutting, Not sharp, Penetrating, Plant, Plot, Pronged, Rough, Rounded, Slow, Spade, Spread, Street, Thick, Thin, Till, Turn, Weed, Woman			
93. Cat:Bird::Frog:			
Fly	51.3	(53.9)	1st Resp. = 12
Insect	15.8	(40.8)	2nd Resp. = 35
Fish	17.1	(23.7)	
Bug	2.6	(9.2)	
4 Dog, Toad			
3 Ant, Cat, Horse, Spider			
2 Alligator, Bird, Grasshopper, Mosquito, Snake, Tadpole, Water			
1 Bee, Beetle, Dragonfly, Flea, Food, Goat, Boat, Ham- burger, Man, Meat, Minnow, Mouse, People, Plants, Pond, Tiger, Trout, Turtle, Worm			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
94. Locomotive:Freight car::Tug:			
Boat	39.5	(52.6)	1st Resp. = 12
Barge	25.0	(36.8)	2nd Resp. = 28
Ship	13.2	(31.6)	
Ocean liner	3.9	(7.9)	
Pull	3.9	(7.9)	
4 Steamer			
3 Rope			
2 Coal, Yacht			
1 Box, Caboose, Canal, Cargo, Carrier, Carry, Cruiser, Dock, Engine, Flatboat, Float, Follow, Freighter, Harbor, Load, Move, Push, Sail, Schooner, Small, Tanker, Train, Truck, Vessel, War			
95. Automobile:Manufacture::Home:			
Build	38.2	(52.6)	1st Resp. = 23
Construct	7.9	(27.6)	2nd Resp. = 29
Builder	10.5	(17.1)	
Construction	5.3	(11.8)	
Contractor	1.3	(7.9)	
Carpenter	3.9	(6.6)	
4 Constructor, Create			
3 Contract			
2 Architect, Architecture, Building, Family			
1 Agency, Appliance, Assemble, Bricklayer, Design, Designer, Erection, Estate, Grow, Handmade, Home, House, House- hold, Live, Love, Maintain, Make, Manufacture, Owner, Raise, Real estate, Reality, Remolder, Ride, Sale, Shelter, Supplies, Trailer, Wrecking			
96. Door:Hinge::Leg:			
Joint	36.8	(52.6)	1st Resp. = 18
Knee	28.9	(47.4)	2nd Resp. = 23
Hip	6.6	(15.8)	
Ankle	1.3	(13.2)	
Muscle	3.9	(7.9)	
Socket	2.6	(6.6)	
Bend	1.3	(6.6)	
4 Body			
3 Bone, Table			
2 Cartilage, Chair, Hinge, Thigh, Walk			
1 Arm, Bed, Extremity, Feet, Foot, Glue, Groin, Ligament, Limb, Moveable, Open, Nail			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
97. Hummingbird:Eagle::Shrub:			
Tree	38.2	(51.3)	1st Resp. = 17
Bush	17.1	(36.8)	2nd Resp. = 26
Redwood	13.2	(22.4)	
Oak	5.3	(15.8)	
Sequoia	3.9	(10.5)	
Plant	3.9	(9.2)	
Forest	1.3	(6.6)	
Hedge	1.3	(6.6)	
3 Weed			
2 Rose			
1 Aerie, Briar, Cactus, Crabgrass, Elm, Evergreen, Flower, Garden, Giant oak, Mountain, Palm, Plantation, Pine, Sing, Stump, Strangler, Willow			
98. Salt:Mine::Marble:			
Quarry	46.1	(50.0)	1st Resp. = 27
Mine	6.6	(21.1)	2nd Resp. = 35
Pit	1.3	(14.5)	
Stone	5.3	(9.2)	
Mountain	2.6	(9.2)	
Rock	1.3	(7.9)	
3 Earth, Ground, Table			
2 Bag, Cave, Dig, Excavate, Floor, Granite			
1 Box, Building, Cake, Chisel, Cliff, Deposit, Dredge, Eat, Extracting, Factory, Field, Find, Furniture, Glass, Hole, Ice cream, Limestone, Museum, Ocean, Play, Porch, Produce, Round, Sculpture, Sediments, Sink, Slab, Small, Sound, Staircase, Statue, Theatre, Yards			
99. Play:Toys::Work:			
Tools	44.7	(50.0)	1st Resp. = 26
Machines	9.2	(23.7)	2nd Resp. = 35
Job	10.5	(14.5)	
Instruments	.0	(6.6)	
4 Books, Equipment, Money			
3 Hands, Labor, Study			
2 Employment, Implements, Materials, Mind, Office, Papers, Pencils, Telephone, Toys, Utensils			
1 Assignment, Children, Classes, Computer, Day, Desk, Earn, Eat, Facts, Hammer, Hard, Jackhammer, Knowledge, Methods, Notes, Pay, Pen, Pick-up toys, Produce, Read, Serious, School, Shovel, Skill, Tasks, Tests, Trappings of a job, Typewriter, Uniform			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
100. Acorn:Oak::Bulb:			
Tulip	42.1	(50.0)	1st Resp. = 12
Flower	15.8	(31.6)	2nd Resp. = 25
Light	9.2	(19.7)	
Onion	9.2	(19.7)	
Plant	5.3	(14.5)	
Lamp	5.3	(7.9)	
Socket	3.9	(6.6)	
4 Rose			
3 Crocus, Iris			
2 Begonia, Dahlia, Geranium, Gladiolus			
1 Blossom, Cactus, Ceiling, Daffodil, Electricity, Hyacinth, Lily, Nut, Radio, Squirrel, Switch, Turnip, Vegetable, Wire			

40%-50% Range

101. Locomotive:Transportation::Radio:			
Communication	46.1	(48.7)	1st Resp. = 19
Listening	7.9	(19.7)	2nd Resp. = 27
Entertainment	3.9	(18.4)	
Music	6.6	(17.1)	
Information	9.2	(15.8)	
Sound	5.3	(9.2)	
Enjoyment	2.6	(6.6)	
News	1.3	(6.6)	
4 Pleasure			
2 Audio, Education, Hearing, Media, Messages, Talk			
1 Airwaves, Amusement, Association, Awareness, Broadcast, Bullshit, Commercial, Companionship, Contact, Conver- sation, Interpretation, Knowledge, Median, Receiver, Send, Signal, Speech, Train, Transport, Waves			
102. String:Top::Batteries:			
Radio	40.8	(48.7)	1st Resp. = 17
Flashlight	18.4	(38.2)	2nd Resp. = 25
Toy	11.8	(38.2)	
Car	3.9	(10.5)	
Robot	3.9	(6.6)	
4 Calculator			
3 Machine			
2 Game, Motor, Tape recorder			
1 Cables, Carbon, Cassette, Chemicals, Die, Energy, Engine, Everready, Generator, Light, Positive, Power, Rocket, Rope, See, Spin, Television, Terminal, Tool, Top, Trans- mitter, Truck, Walkie-talkie, Watch, Water			

	1st Response	Cumulative	# Different Answers
103. Sheep:Flock::Star:			
Galaxy	30.3	(48.7)	1st Resp. = 18
Constellation	25.0	(34.2)	2nd Resp. = 26
Cluster	13.2	(15.8)	
Sky	3.9	(15.8)	
Universe	1.3	(11.8)	
Group	3.9	(10.5)	
Milky Way	2.6	(6.6)	
4 Heavens			
3 Astronomy			
2 Night, Solar system, System			
1 Arrangement, Big Dipper, Black, Category, Civilization, Configuration, Cosmos, Direction, Falling, Few, Formation, Gather, Individuals, Light, Nebulae, Night sky, Ringo, Shine, Shooting, Space, Sparkle, Stellar system			
104. Rain:Mud::Drought:			
Dry	22.4	(48.7)	1st Resp. = 17
Dust	31.6	(39.5)	2nd Resp. = 23
Dirt	7.9	(22.4)	
Sand	7.9	(17.1)	
Famine	9.2	(9.2)	
Desert	6.6	(6.6)	
4 Clay, Parch			
3 Cracks			
2 Hard ground, Hot			
1 Batch, Bathe, Boat, Crusty, Dead, Death, Desolate, Disaster, Erosion, Float, Heat, Land, Mirage, Mudcracks, Parched earth, Plague, Slush, Snow, Sparseness, Thirst, Water, Wet, Wilt			
105. Tank:Fish::Cage:			
Animal	31.6	(47.4)	1st Resp. = 11
Bird	35.5	(46.1)	2nd Resp. = 22
Lion	14.5	(25.0)	
Tiger	6.6	(17.1)	
Monkey	1.3	(13.2)	
Dog	.0	(6.6)	
4 Bear			
3 Mammal, Zoo			
2 Creature, Gerbil, Hamster, Mice			
1 Amphibious, Aquarium, Bars, Beast, Canary, Gorilla, Keep, Lock-up, Man, Mouse, Rodent, Snake, Wolf			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
106. Man:Bread::Horse:			
Hay	36.8	(44.7)	1st Resp. = 15
Grass	15.8	(39.5)	2nd Resp. = 19
Oats	19.7	(35.5)	
Grain	7.9	(23.7)	
Wheat	2.6	(6.6)	
4 Water			
3 Feed, Sugar			
2 Alfalfa, Grazes, Meat, Pasture, Ride, Saddle			
1 Apples, Bread, Corn, Maize, Meal, Rider, Run, Speed, Straw, Woman			
107. Pelt:Squirrel::Rind:			
Orange	35.5	(44.7)	1st Resp. = 22
Watermelon	14.5	(23.7)	2nd Resp. = 19
Lemon	5.3	(19.7)	
Cantaloupe	3.9	(17.1)	
Grapefruit	2.6	(13.2)	
Melon	6.6	(7.9)	
Pig	5.3	(6.6)	
4 Apple, Fruit			
3 Cow			
2 Animal, Mouse, Pork, Rat, Skin			
1 Cattle, Chipmunk, Corner, Deer, Elephant, Honey bear, Horse, Monkey, Pear, Peel, Plant, Squeeze, Swine, Tangerine, Tree			
108. Gymnasium:Health::Library:			
Knowledge	30.3	(44.7)	1st Resp. = 15
Learning	13.2	(31.6)	2nd Resp. = 20
Education	11.8	(19.7)	
Study(ing)	9.2	(19.7)	
Mind	11.8	(14.5)	
Intelligence	6.6	(14.5)	
Reading	3.9	(14.5)	
4 Books			
3 Health, Research			
2 Shelves, Wisdom			
1 Anti-ignorance, Boredom, Expansion, Growth, Head, Intellect, Intellectualism, Memory, Mental, Mental health, Quiet, Scholar, Smart, Work			

		1st <u>Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
109.	Shoe:Leather::Highway:			
	Concrete	27.6	(44.7)	1st Resp. = 18
	Asphalt	21.1	(44.7)	2nd Resp. = 21
	Cement	10.5	(26.3)	
	Tar	7.9	(15.8)	
	Pavement	5.3	(9.2)	
	Car	5.3	(6.6)	
	Road	3.9	(6.6)	
	4 Blacktop, Gravel, Stone			
	2 Buses, Macadam			
	1 Bridge, Dirt, Guardrails, Lane, Leather, Lines, Long, People, Police, Rock, Rubber, Signs, Trailer, Truck, Wear			
110.	Bottle:Brittle::Tire:			
	Flexible	34.2	(43.4)	1st Resp. = 31
	Rubber	15.8	(22.4)	2nd Resp. = 36
	Elastic	1.3	(9.2)	
	Soft	2.6	(7.9)	
	Rubbery	1.3	(7.9)	
	4 Fire			
	3 Bendable, Car, Pliable, Wire			
	2 Flat, Hard, Strong, Unbreakable			
	1 Admire, Black, Bounce, Bounceable, Bouncy, Bumpy, Burst, Change, Compressible, Course, Enduring, Firm, Give, Gummy, Hour, Ladybug, Long wearing, Malleable, Mine, Old, Puncture, Punctureable, Resilient, Rim, Rugged, Satire, Smire, Soft, Spongy, Studs, Sturdy, Tare, There, Thin, Tore, Tour, Tower, Thread, Tube, Wear, Wheel, Yielding			
111.	Cow:Grass::Hen:			
	Feed	30.3	(43.4)	1st Resp. = 15
	Corn	18.4	(38.2)	2nd Resp. = 25
	Grain	18.4	(35.5)	
	Seeds	15.8	(19.7)	
	Meal	1.3	(5.3)	
	4 Egg			
	3 Chicken			
	2 Barnyard, Coop, Hay, Nest, Oats, Scratch, Straw, Worms			
	1 Anything, Barn, Bugs, Chick, Cud, Dirt, Farm, Food, Grass, Green, Insect, Nuts, Water, Wheat			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
112. Safety valve:Boiler::Fuse:			
Electricity	30.3	(43.4)	1st Resp. = 23
Lights	11.8	(18.4)	2nd Resp. = 28
Fuse box	6.6	(18.4)	
Circuits	10.5	(13.2)	
Box	5.3	(13.2)	
Dynamite	5.3	(6.6)	
House	1.3	(6.6)	
4 Wires			
3 Current, Heat, Plug, Socket box			
2 Electrical system, Generator, Power, Radio, Shock, Switch, Transformer			
1 Amplifier, Appliance, Battery, Blow, Bomb, Building, Component, Connection, Electric motor, Electric store, Explode, Explosive, Firecracker, Lamp, Meter, Over- load, Protection, Refrigerator, Socket, Sparks, Temper, Washer			
113. Brick:Building::Leather:			
Shoes	28.9	(43.4)	1st Resp. = 20
Coat	18.8	(27.6)	2nd Resp. = 28
Clothing	15.8	(19.7)	
Belt	9.2	(17.1)	
Purse	2.6	(14.5)	
Jacket	5.3	(10.5)	
Saddle	5.3	(7.9)	
4 Furniture			
3 Chair, Making			
2 Accessories, Sewing, Wallet			
1 Binding, Book, Boots, Cap, Case, Cement, Constructing, Crafts, Decoration, Gloves, Goods, Handbag, Hand- crafting, Hide, Holster, Leather-working, Room, Soft, Sole, Suede, Tent, Teepee, Tooling, Upholstery, Working			
114. Coke:Coal::Bread:			
Flour	25.0	(43.4)	1st Resp. = 18
Wheat	22.4	(31.6)	2nd Resp. = 25
Dough	15.8	(26.3)	
Yeast	9.2	(21.1)	
Sandwich	5.3	(6.6)	
4 Butter, Grain, Water			
3 Bread pudding, Rye			
2 Loaf, Meal, Pastry, Rolls, Sugar, Toast			
1 Bake, Buns, Carbohydrates, Cheese, Cola, Corn, Crust, Donuts, Field, Food, Macaroni, Oats, Powder, Soft, Stuffing, 100% natural			

	1st Response	Cumulative	# Different Answers
115. Sand:Glass::Clay:			
Pottery	30.3	(42.1)	1st Resp. = 23
Brick	25.0	(40.8)	2nd Resp. = 35
Ceramics	2.6	(7.9)	
Sculpture	2.6	(7.9)	
Pots	5.3	(6.6)	
Dirt	3.9	(6.6)	
3 Ashtray, Building, Mud			
2 Adobe, Block, Cup, House, Iron, Marble, Pipe, Water			
1 Bottle, Bowl, Box, Boxing, Cement, Cut, Dish, Gravel, Gray, Ironstone, Metal, Model, Mold, Moldings, Ornament, Plate, Rock, Sea, Shapes, Steel, Stove, Substance, Tool, Vase, Wall, Wet, Wheel			
116. Tiger:Carnivorous::Horse:			
Vegetarian	28.9	(42.1)	1st Resp. = 14
Herbivorous	25.0	(30.3)	2nd Resp. = 22
Omnivorous	17.1	(18.4)	
Plant eater	1.3	(17.1)	
Grass-eating	.0	(10.5)	
Non-carnivorous	3.9	(9.2)	
Hay-eating	1.3	(7.9)	
4 Carnivorous			
3 Grain-eating			
2 Meat, Meat-eating			
1 Dependable, Fruit eater, Grazing, Mane, Mean, Non- aggressive, Non-meat-eating, Non-predator, Non- regurgitant, Oats, Rare, Ride, Run, Tail, Tame, Wheat			
117. Bird:Eagle::Beast:			
Lion	26.3	(42.1)	1st Resp. = 23
Tiger	6.6	(21.1)	2nd Resp. = 30
Gorilla	7.9	(14.5)	
Monster	9.2	(13.2)	
Animal	7.9	(13.2)	
Bear	6.6	(10.5)	
Ape	5.3	(10.5)	
Wolf	2.6	(7.9)	
Man	5.3	(6.6)	
3 Creature, Elephant, Leopard			
2 Cat, Dinosaur, Giant, Mammoth			
1 Abe, Aggressive, Alien, Beating, Being, Boar, Cow, Coyote, Deer, Dog, Fly, Gun, Horse, Kill, King, King Kong, Kitten, Mammal, Mean, Monkey, Ox, Pet, Rhino, Turkey			

		1st Response	Cumulative	# Different Answers
118.	Cat:Mouse::Wolf:			
	Rabbit	35.5	(40.8)	1st Resp. = 21
	Dog	7.9	(17.1)	2nd Resp. = 38
	Chicken	7.9	(14.5)	
	Deer	6.6	(13.2)	
	Sheep	6.6	(9.2)	
	Cat	2.6	(7.9)	
	Lamb	5.3	(6.6)	
	Prey	3.9	(6.6)	
	4 Bird			
	3 Fox			
	2 Animal, Calves, Pig, Groundhog, Man, Rat, Small animals			
	1 Beaver, Chase, Chipmunk, Cow, Eagle, Fish, Food, Grouse, Hare, Hen, Hunter, Lion, Lute, Meat, Mouse, Packs, Person, Pheasant, Predator, Raccoon, Stock, Tiger, Victim			
119.	Gun:Holster::Sword:			
	Sheath	34.2	(40.8)	1st Resp. = 20
	Belt	9.2	(23.7)	2nd Resp. = 26
	Holder	6.6	(23.7)	
	Case	13.2	(19.7)	
	Scabbard	10.5	(15.8)	
	4 Holster			
	3 Covering			
	2 Blade, Bolster, Container, Fight, Pocket, Shaft			
	1 Bayonet, Carrier, Cut, Epee, Excalibur, Girdle, Lance, Loop, Pants, Pouch, Protector, Rack, Rapier, Sack, Satchet, Short, Side, Slice, Slip cover, Stab, Strap, Sword carrier, Wilkinson ad			
120.	Success:Joy::Failure:			
	Sadness	19.7	(40.8)	1st Resp. = 20
	Depression	15.8	(31.6)	2nd Resp. = 24
	Sorrow	19.7	(23.7)	
	Disappointment	7.9	(15.8)	
	Unhappiness	5.3	(15.8)	
	Sad	6.6	(10.5)	
	Defeat	2.6	(6.6)	
	4 Despair, Misery			
	3 Distress			
	2 Agony, Dejection, Disgust, Unhappy			
	1 Angry, Bitterness, Cry, Die, Discontent, Down, Down-hearted, Failure, Frustration, Gloom, Hate, Long, Mean, Mood, Pain, Regret, Remorse, Shame, Tragedy			

30%-40% Range	1st Response	Cumulative	# Different Answers
121. Cloth:Coat::Gingham:			
Dress	34.2	(39.5)	1st Resp. = 30
Sh(k)irt	5.3	(14.5)	2nd Resp. = 39
Apron	2.6	(11.8)	
Blouse	1.3	(10.5)	
4 Checks			
3 Cotton, Material, Sweater, Tablecloth			
2 Cloth, Clothing, Curtain, Hat, Pants, Suit			
1 Bag, Book, Cap, Cats, Cheese, Cloak, Clothes, Coat, Construction, Denim, Dog, Fabric, Far, Food, Ginger, Gown, Jacket, Jean, Loose, Magazine, Man, Maxi, Midi, Outfit, Pattern, Protection, Quilt, Sack, Sheep, Shirt, Smock, Spread, Stray, Summer dress, Sunsuit, Tapestry, Trousers, Uniform, Warmth, Wear, Woman			
122. Coconut:Acorn::Palm:			
Oak	32.9	(39.5)	1st Resp. = 20
Tree	19.7	(32.9)	2nd Resp. = 29
Leaf	11.8	(21.1)	
Finger	3.9	(7.9)	
Maple	3.9	(7.9)	
Plant	.0	(6.6)	
4 Coconut, Grass			
3 Beech, Branch, Oak leaf			
2 Bush, Elm, Fern, Hand, Trunk			
1 Banana, Bud, Date, Fern leaf, Fig, Fin, Fruit, Green, Ivy leaf, Needle, Nut, Palm tree, Paw, Pedal, Pineapple, Sea, Shrub, Skin, Spring, Sunday, Thumb, Wrist			
123. Profit:Selling::Fame:			
Fortune	27.6	(39.5)	1st Resp. = 31
Work	3.9	(11.8)	2nd Resp. = 43
Money	5.3	(9.2)	
Acting	6.6	(7.9)	
Success	5.3	(7.9)	
Perform	3.9	(7.9)	
Talent	3.9	(6.6)	
Popularity	2.6	(6.6)	
4 Accomplishing, Achievement, Famous, Publicity			
3 Stardom			
2 Attention, Bravery, Glory, Heroism, Known, Singing, Star			
1 Acceptability, Accumulating, Advertising, Aggressive, Ambition, Appearing, Brilliance, Charisma, Cheating, Circulating, Courage, Deed, Discovery, Doing, Entertaining, Excel, Exposure, Good, Hollywood, Honor, Importance, Inventing, Likeness, Making, Newsmaking, Notice, Position, Power, Producing, Profit, Recognition, Renown, Rise, Singing, Selling, Show business, Spectacle, Spending, Sports great, Winning			

	1st Response	Cumulative	# Different Answers
124. Frost:Flowers::Jealousy:			
Love	36.8	(38.2)	1st Resp. = 25
People	15.8	(22.4)	2nd Resp. = 41
Friendship	7.9	(18.4)	
Friends	3.9	(6.6)	
4 Animals, Happiness, Kindness, Relationship			
2 Affection, Enemies, Hate, Humans, Marriage			
1 Acceptance, Ambition, Appraise, Boyfriend, Companionship, Compassion, Covet, Destroys, Deteriorates, Disposition, Divorce, Dog, Envious, Envy, Evening, Generosity, Getting along, Girl, Girlfriend, Greed, Hatred, Hurt, Infatuation, Jack, Jewelry, Jews, Kids, Kill, Kiss, Lovers, Man, Mind, Neighbors, Personality, Personal relations, Pretty, Putdown, Red, Sweet, Trust, Understanding, Willingness, Women			
125. Loud:Sound::Hot:			
Temperature	30.3	(38.2)	1st Resp. = 22
Feeling	6.3	(23.7)	2nd Resp. = 31
Heat	7.9	(18.4)	
Touch	11.8	(14.5)	
Stove	3.9	(10.5)	
Weather	6.6	(9.2)	
Cold	5.3	(9.2)	
Fire	3.9	(7.9)	
Sun	3.9	(7.9)	
4 Degrees, Sensation			
3 Steam			
2 Air, Burn, Pot, Tepid, Water			
1 Boiling, Bread, Breeze, Brine, Climate, Coffee, Day, Energy, Flame, Friction, Frigid, Humid, Iron, Oven, Pain, Plate, Quick, Quick-moving, Room, Sand, Sense, Soup, State, Swarm, Warmth			
126. Pistol:Trigger::Motor:			
Ignition	28.9	(38.2)	1st Resp. = 21
Starter	18.4	(34.2)	2nd Resp. = 28
Key	9.2	(23.7)	
Engine	6.6	(13.2)	
Car	7.9	(11.8)	
Switch	6.6	(10.5)	
Piston	2.6	(7.9)	
3 Boat, Plane, Spark plug			
2 Battery, Button, Deadly, Gas pedal			
1 Accelerator, Back, Carburetor, Casing, Choke, Clutch, Coordi- nator, Cord, Cylinder, Fast, Gas, Gasoline, Generator, Motor, Motorcycle, Plug, Points, Speed, Start, Throttle, Truck, Valves			

	1st Response	Cumulative	# Different Answers
127. Iron:Steel::Sand:			
Glass	32.9	(36.8)	1st Resp. = 22
Beach	10.5	(25.0)	2nd Resp. = 30
Dirt	10.5	(15.8)	
Cement	7.9	(15.8)	
Gravel	6.6	(11.8)	
Castle	2.6	(9.2)	
Concrete	2.6	(6.6)	
Dust	2.6	(6.6)	
4 Dune, Silica			
3 Rock, Shovel, Stone			
2 Filler, Grain, Limestone, Mud, Pebbles, Salt, Water			
1 Brick, Brown, Clay, Damp, Gritty, Hard, Mold, Mountain, Ocean, Peat moss, Powder, Sandbox, Sandpaper, Sand- stone, Sugar, Window, Wood			
128. Cold:Ice::Heat:			
Fire	27.6	(36.8)	1st Resp. = 20
Sun	10.5	(27.6)	2nd Resp. = 32
Steam	17.1	(21.1)	
Flame	5.3	(11.8)	
Hot	5.3	(9.2)	
Boil	3.9	(9.2)	
Stove	3.9	(7.9)	
4 Furnace, Melt, Water			
3 Coal, Liquid, Oven, Vapor			
2 Hell, Smoke, Sweat			
1 Acid, Activity, Barbeque, Boiling water, Burner, Burning, Coffee, Fiery gasoline, Food, Gas, Hot water, Humidity, Light, Mushy, Oven, Radiator, Sauna, Soup, Sterilized, Temperature, Warm			
129. Flea:Horsefly::Minnow:			
Fish	27.6	(36.8)	1st Resp. = 26
Trout	14.5	(26.3)	2nd Resp. = 26
Whale	5.3	(18.4)	
Shark	6.6	(13.2)	
Bass	3.9	(11.8)	
Guppy	3.9	(7.9)	
Carp	2.6	(6.6)	
4 Goldfish			
3 Perch, Porpoise, Tadpole			
2 Animal, Bait, Catfish, Fly, Frog, Pond, Salmon			
1 Angelfish, Bluegill, Crab, Crappie, Dog, Dolphin, Firefly, Insect, Lake, Salamander, Sardine, Small, Stream, Sunfish, Tiny, Tuna, Water, Worm			

	1st Response	Cumulative	# Different Answers
130. Tiger:Feline::Wolf:			
Canine	32.9	(35.5)	1st Resp. = 20
Dog	18.4	(42.1)	2nd Resp. = 29
Female	5.3	(9.2)	
Fox	2.6	(9.2)	
Wolvine	7.9	(7.9)	
Feline	3.9	(7.9)	
Animal	2.6	(7.9)	
Carnivorous	3.9	(6.6)	
4 Coyote			
3 Bitch, Mammal, Pack			
2 Cat, Cub, Fierce			
1 Aggressive, Baby, Bark, Bovine, Dog genus, Dog-like, Girl, Herd, Hound, Hyena, Kitten, Male, Masculine, Rugged, She-wolf, Shifty, Sibling, Sissy, Sneaky, Tiger, Wild, Wolves			
131. Calf:Shoe::Goose:			
Pillow	30.3	(35.5)	1st Resp. = 29
Feathers	6.6	(18.4)	2nd Resp. = 41
Feet	9.2	(14.5)	
Web	6.6	(9.2)	
Down	3.9	(7.9)	
Hat	2.6	(6.6)	
4 Food			
3 Egg, Gander, Mattress			
2 Bed, Bird, Blanket, Head, Jacket, Shirt, Sleeping bag, Wing			
1 Accessories, Bare, Bill, Book, Boots, Bump, Clothes, Cook, Cow, Duck, Eat, Featherbed, Flipper, Float, Fowl, Glove, Grease, Hoof, Leather, Leg, Meal, Meat, Nails, Neck, Pack, Pants, Paw, Pen, Pencil, Pimple, Poultry, Quilt, Roast, Rubbers, Sock, Soft, Stuffing, Swim			
132. Cell:Tissue::Tissue:			
Organ	26.3	(34.2)	1st Resp. = 16
Skin	19.7	(34.2)	2nd Resp. = 27
Muscle	19.7	(32.9)	
Body	5.3	(15.8)	
Cell	6.6	(9.2)	
Organism	3.9	(7.9)	
3 Bones, System			
2 Blood, Brain, Flesh, Kleenex, Structure, Tendon			
1 Animal, Arm, Biology, Chemical makeup, Cytoplasm, Epidermis, Fiber, Fool, Function, Hand, Heart, Inside, Layer, Ligaments, Liver, Organelle, Part, Skeleton, Tissue, Vessels, Wall			

	1st Response	Cumulative	# Different Answers
133. Rudder:Ship::Tail:			
Plane	25.0	(32.9)	1st Resp. = 21
Bird	10.5	(26.3)	2nd Resp. = 30
Animal	11.8	(22.4)	
Fish	13.2	(17.1)	
Kite	7.9	(9.2)	
Dog	5.3	(9.2)	
4 Jet, Monkey			
3 Beaver, Cat			
2 Alligator, Balance, Behind, Boat, Eagle, End, Kangaroo			
1 Body, Direction, Dolphin, Duck, Flagella, Fin, Gait, Glider, Head, Helicopter, Lion, Lizard, Locomotion, Navigate, Opossum, Seal, Skin, Snake, Steer, Step on, Ties, Tiger, Travel, Whale			
134. Man:Tiger::Tiger:			
Lion	17.1	(30.3)	1st Resp. = 30
Elephant	11.8	(17.1)	2nd Resp. = 37
Cat	11.8	(11.8)	
Deer	6.6	(9.2)	
Antelope	2.6	(6.6)	
Bear	2.6	(6.6)	
Mouse	2.6	(6.6)	
Man	.0	(6.6)	
4 Bird			
3 Animal, Monkey, Zebra			
2 Ants, Beast, Chimp, Fish, Fox, Gorilla, Leopard, Panther, Rabbit, Rat, Smaller animals, Snake			
1 Ape, Big, Bull, Cattle, Cow, Cubs, Dog, Enemy, Gazelle, Goat, Gun, Hippo, Horse, Hunter, Hyena, Insect, Kill, Muskrat, Prey, Python, Squirrel, Striped, Teeth, Tenacity, Vicious, Whale			

20%-30% Range

135. Dove:Peace::Beaver:			
Dam	14.5	(28.9)	1st Resp. = 27
Work	15.8	(22.4)	2nd Resp. = 37
Busy	11.8	(17.1)	
Industriousness	9.2	(15.8)	
War	6.6	(6.6)	
4 Business, Construction, Destruction, Water			
3 Build, Fighting, Wood			
2 Animal, Building, Diligence, Eager, Energetic, Teeth, Tree			
1 Active, Beauty, Chewing, Clever, Confusion, Conservation, Damage, Den, Docility, Eagerness, Efficiency, Energy, Fat, Gentleness, Happiness, Home, Hostility, Ingenuity, Knowing, Love, Nature, Nest, Pleasure, Product, Relentless, Seasons, Spring, Swimming, Tail, Tearing apart, Wanderer, Wild			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
136. Skeleton:Body::Law:			
Government	21.1	(27.6)	1st Resp. = 25
Justice	14.5	(26.3)	2nd Resp. = 34
Society	9.2	(15.8)	
Court	7.9	(14.5)	
Order	5.3	(9.2)	
Constitution	2.6	(9.2)	
Country	3.9	(6.6)	
4 Judiciary, Land, Nation, System			
3 Judicial system, Lawyer, People, Police			
2 Democracy, Jail, Judge, Legislation, Rights, Rules			
1 Attorney, Book, Branches, City, Civil order, Concept, Congress, Criminal, Culture, Dishonest, Document, Human, Laws, Peace, Politics, Principles, Self, Social fabric, Social structure, State, Town, Universal, USA			
137. Solution:Mystery::Learning:			
Knowledge	21.1	(27.6)	1st Resp. = 42
Education	6.6	(10.5)	2nd Resp. = 44
Problem	7.9	(7.9)	
Experience	1.3	(7.9)	
Teaching	3.9	(6.6)	
Question	1.3	(6.6)	
4 Books, Ignorance			
3 School, Solving, Study, Test			
2 Answer, Cognition, Concept, Curiosity, Difficult, Fact, Information, Intelligence, Knowing, Learning, Material, Mystery, Read, Reading, Studying, Unknown			
1 Ability, Accomplishment, Achievement, Behavior, Challenge, Class, Creating, Development, Discovery, Graduation, Homework, Jobs, Know, Language, Life, Listening, Motivation, Mute, Not knowing, People, Response, Schooling, Search, Smart, Studies, Stimulus, Stupidity, Subject, Task, Teach, Textbook, Trail, Unknowing, Unknowledgeable, Unsolvable, Wisdom, Yearning			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
138. Feather:Hat::Embroidery:			
Shirt	14.5	(27.6)	1st Resp. = 29
Dress	18.4	(26.3)	2nd Resp. = 31
Clothing	5.3	(11.8)	
Pillow	6.6	(10.5)	
Pillowcase	6.6	(10.5)	
Handkerchief	6.6	(9.2)	
Pants	.0	(9.2)	
Blouse	2.6	(7.9)	
Cloth	3.9	(6.6)	
4 Thread			
3 Blanket, Coat, Jeans, Tablecloth			
2 Doily, Linen, Needle, Picture, Sew, Scarf, Stitch, Yarn			
1 Apron, Design, Down, Edging, Hat, Jacket, Lace, Light, Loom, Needlepoint, Pinafore, Purse, Quilt, Sheet, Slacks, Slip, Sweater, Table, Tapestry, Tea towel			
139. Liquid:Syphon::Smoke:			
Inhale	22.4	(26.3)	1st Resp. = 30
Fan	5.3	(11.8)	2nd Resp. = 41
Blow	3.9	(11.8)	
Stack	9.2	(10.5)	
Cigarette	6.6	(9.2)	
Breathe	3.9	(9.2)	
Chimney	3.9	(9.2)	
Filter	5.3	(6.6)	
Pipe	3.9	(6.6)	
Suck	3.9	(6.6)	
Fire	2.6	(6.6)	
3 Air out, Draw, Suction			
2 Exhale			
1 Air, Aspirate, Blown, Breeze, Burn, Cancer, Cloudy, Draft, Draw up, Engine, Evaporator, Exhaust, Exude, Float, Flue, Fumigate, Funnel, Haze, Heat, Hose, Ingest, Inhalation, Kill, Overcast, Nicotine, Pour, Puff, Reefer, Ring, Screen, Smell, Smoother, Solid, Steam, Stove, Syphon, Tar, Tube, Tunnel, Vacuum, Ventilator			

		1st Response	Cumulative	# Different Answers
140.	Seal:Fish::Bird:			
	Worm	19.7	(23.7)	1st Resp. = 34
	Insect	10.5	(21.1)	2nd Resp. = 40
	Robin	3.9	(9.2)	
	Fly	1.3	(9.2)	
	Ostrich	6.6	(7.9)	
	Bat	5.3	(7.9)	
	Eagle	3.9	(7.9)	
	Bug	1.3	(6.6)	
	4 Animal, Canary, Mammal, Penguin			
	3 Airplane, Chicken, Flying squirrel			
	2 Blue jay, Crow, Duck, Hawk, Sparrow, Squirrel			
	1 Animals, Aquarium, Aviary, Aviatory, Bee, Bird, Bluebird, Carnivore, Carp, Cat, Chordata, Cloud, Cold, Creature, Falcon, Family, Frog, Goldfish, Grasshopper, Grubs, Kite, Kiwi, Mammal, Man, Navigator, Nest, Parrot, Peaceful, Pilot, Rain, Seed, Vertebrate, Wren			
141.	City:Village::Army:			
	Platoon	17.1	(23.7)	1st Resp. = 27
	Battalion	10.5	(22.4)	2nd Resp. = 34
	Navy	10.5	(13.2)	
	Squad	6.6	(13.2)	
	Division	6.6	(10.5)	
	Unit	2.6	(9.2)	
	Camp	3.9	(7.9)	
	Troop	3.9	(6.6)	
	4 Base, Corps, Marines			
	3 Air Force, Company, Country, Outfit, Police, Soldiers, War			
	2 Barracks, Group, Nation, Regiment, Reserves, ROTC, Squadron			
	1 Artillery, Boy Scouts, Cadets, Defense system, Force, Infantry, Killing, Men, Military, Military force, Militia, National Guard, Pack, Post, Privates, Protection, Sheriff, Town			
142.	Cow:Guernsey::Dog:			
	Collie	15.8	(23.7)	1st Resp. = 36
	Poodle	7.9	(18.4)	2nd Resp. = 34
	Shepherd	9.2	(15.8)	
	Setter	2.6	(9.2)	
	Beagle	2.6	(9.2)	
	Spaniel	5.3	(6.6)	
	Terrier	2.6	(6.6)	
	4 Bark, Boxer			
	3 Dalmation, Doberman, St. Bernard			
	2 Afghan, Bassett, Cat, Chihuahua, Dachshund, Husky, Irish Setter, Pointer, Sheepdog, Soap			
	1 Animal, Baby, Bit, Breed, Bulldog, Eat, Exist, Fido, Great Dane, Greyhound, Hound, Howl, Hunting, Kennel, Labrador, Lather, Milk, Mutt, Paw, Pedigree, Police, Pond, Pup, Purina, Retriever, Schnauzer, Scottie, Tail, Wolf			

	<u>1st</u> <u>Response</u>	<u>Cumulative</u>	<u># Different</u> <u>Answers</u>
143. Bee:Stinger::Man:			
Gun	10.5	(23.7)	1st Resp. = 32
Fist	17.1	(22.4)	2nd Resp. = 35
Hand	9.2	(14.5)	
Mind	6.6	(10.5)	
Weapon	5.3	(10.5)	
Bite	6.6	(6.6)	
Knife	1.3	(6.6)	
4 Arm, Brain, Mouth, Nails, Punch, Teeth			
3 Foot, Killer, Tongue, Words			
2 Eater, Fight, Hit, Kick, Woman			
1 Bacteria, Carnivorous, Destroy, Eat, Enemy, Germs, Hatred, Honey, Hunter, Kill, Machines, Mean, Nut, Pinch, Pistol, Scratch, Shot, Speaker, Sperm, Tail end, Talker, Technology, Teeth, Thought, Thumb, Violence, Waste			

10%-20% Range

144. Bulldog:Fox::Tenacity:			
Slyness	13.2	(19.7)	1st Resp. = 28
Cunning	10.5	(18.4)	2nd Resp. = 36
Sly	6.6	(11.8)	
Cleverness	3.9	(10.5)	
3 Wily			
2 Clever, Fear, Fighters, Snake			
1 Agility, Animal, Anxiousness, Arrogance, Audacity, Bravery, Cling, Complex, Coyote, Crowd, Foxiness, Free, Game, Gather, Grasp, Greed, Hyper, Iago, Impatience, Ingenuity, Kitten, Landlord, Laziness, Lithe, Live, Lone, Maneuver, Maternal, Mortal, Mutt, People, Permissiveness, Persistence, Person, Placidity, Puppy, Rat, Shrewd, Shrewdness, Sneaky, Sneakiness, Struggle, Stubborn, Stubbornness, Tenant, Walk, Wariness, Watchful, Weasel, Wicked, Wolf			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
145. Metropolis:Teeming::Prairie:			
Desolate	10.5	(19.7)	1st Resp. = 34
Empty	9.2	(15.8)	2nd Resp. = 37
Deserted	9.2	(14.5)	
Barren	5.3	(13.2)	
Lonely	6.6	(11.8)	
Quiet	3.9	(7.9)	
4 Desert, Dogs			
3 Calm, Isolation			
2 Dull, Field, Flat, Grass, Inactive, Lonesome, Open, Peaceful, Sparse, Teeming			
1 Boring, Cattle, Citing, Cold, Cow, Dead, Dense, Dirt, Discovery, Drizzling, Grazing, Herd, Hot, Lifeless, Lone, Meadows, Minute activity, Nothing, Pack, Peaceful, Pioneer, Range, Rolling, Scattered, Sitting, Slow, Solitary, Spacious, Still, Vacant, Vast, Wasteland, Weather, Wild, Wilderness			
146. Courage:Lion::Speed:			
Roadrunner	14.5	(17.1)	1st Resp. = 28
Cheetah	7.9	(15.8)	2nd Resp. = 39
Jaguar	9.2	(10.5)	
Deer	6.6	(10.5)	
Gazelle	6.6	(10.5)	
Car	5.3	(10.5)	
Antelope	9.2	(9.2)	
Racer	1.3	(6.6)	
4 Horse, Leopard			
3 Bullet, Hare, Lightning, Ostrich, Plane, Rabbit, Tiger			
2 Bird, Cougar, Elk, Fox, Greyhound, Jet, Light, Motorcycle, Snake			
1 Afraid, Arrow, Automobile, Bunny, Coward, Cross-country runner, Dangerous, Defense, Dolphin, Fast, Flies, Junkie, Kills, Locomotive, Mercury, Meteor, O. J. Simpson, Panther, Person, Rocket, Slow, Thoroughbred, Track, Transportation, Turtle, 747			

	<u>1st Response</u>	<u>Cumulative</u>	<u># Different Answers</u>
147. Necklace:Adornment::Medal:			
Honor	5.3	(17.1)	1st Resp. = 37
Adornment	9.2	(14.5)	2nd Resp. = 38
Decoration	6.6	(11.8)	
Awarded	10.5	(10.5)	
Pride	2.6	(10.5)	
Reward	6.6	(9.2)	
Achievement	7.9	(7.9)	
Chain	5.3	(6.6)	
4 Accomplishment, Show			
3 Pin, Praise, Valor			
2 Courage, Gold, Honorary, Neck, Recognition, Winner, Won			
1 Admired, Badge, Bracelet, Building, Commendation, Conceal- ment, Display, Dress, Glamour, Honorable, Jewelry, Keep- sake, Laurel, Life after death, Links, Medallion, Metal, Pendant, Picture, Practicality, Prestige, Protection, Religion, Religious symbol, Reminder, Rich, Self-comfort, Service, Showmanship, Silver, Souvenir, Success, Symbol, Thank you, Trophy, Useful, Weary, Winning, Worn for a reason			
148. Rubber:Flexibility::Pipe:			
Rigid	11.8	(15.8)	1st Resp. = 33
Stiff	9.2	(15.8)	2nd Resp. = 38
Hard	5.3	(10.5)	
Strong	2.6	(10.5)	
Rigidity	9.2	(9.2)	
Inflexible	1.3	(9.2)	
Sturdy	6.6	(6.6)	
Solid	5.3	(6.6)	
4 Hardness, Stability, Stiffness, Straight, Strength			
3 Brittle, Inmalleable, Smoke, Unbendable			
2 Durability, Immovability, Lead, Solidity, Steel, Tobacco			
1 Bendability, Carrying capacity, Conductivity, Dimensions, Direction, Ductility, Firm, Firmness, Fixed, Holds things, Hollow, Inelastic, Line, Metal, Metallic, Passing thru [sic], Permanent, Plumbing, Rigidness, Round, Roundness, Stable, Stationary, Staunch, Stern, Strict, Sturdiness, Tough, Tough- ness, Turgid, Unyielding, Whole, Wood, Wooden			

	1st Response	Cumulative	# Different Answers
149. Wheel:Tiller::Car:			
Driver	10.5	(14.5)	1st Resp. = 35
Steering wheel	10.5	(10.5)	2nd Resp. = 47
Tire	7.9	(10.5)	
4 Boat, Engine, Steering, Train, Wheel			
3 Axle, Bus, Operator, Salesman, Transportation, Turn			
2 Drive, Ground, Mechanic, Motor, Plow, Ride, Ship, Trailer, Transport, Truck			
1 Align, Balance, Ball bearings, Brakes, Cab, Control, Con- venience, Deliverer, Door, Ford, Garage, Horn, Insurance, Mailman, Man, Mercedes, Mill, Move, Overseer, Owner, Parking lot, Peddle, Recreation, Repairman, Road, Rotary, Round, Rubber, Shipping, Speed, Spokes, Taxi, Tourist, Tractor, Traffic light, Travel, Traveller, U-Haul, Vehicle			
150. Galley:Vessel::Persimmon:			
Spice	7.9	(10.5)	1st Resp. = 31
Tree	7.9	(10.5)	2nd Resp. = 34
Fruit	5.3	(7.9)	
3 Boat, Food			
2 Earth, Flower, Herb, House, Pie, Plant, Ship, Smell			
1 Banana, Bar, Basement, Berry, Bridge, Building, Bush, Chapel, Church, Cupboard, Dungeon, Eat, Environment, Estate, Feed, Forest, Galley, Garden, Home, Kitchen, Land, Leaves, Mansion, Mouth, Nut, Ocean, Orange, Perfume, Port, Red, Scent, Season, Seek, Stern, Stomach, Sub, Taste, Tea, Train, Travel, Vegetable, Water, Woods			

Table 2
Generation of Correct Relationship within
Each General Type of Semantic Relationship

A. FUNCTION - 30 instances

Definitions:

1. One term performs some function for or action on the other.
2. One term performs the function defined by the other term.

Analogy No. in Table 1	Analogy Base	Production of Correct Relationship	
		Frequency	%
5	Clock:Time::Thermometer:	72	94.7
12	Water:Drink::Bread:	72	94.7
18	Bray:Donkey::Bark:	72	94.7
9	Ear:Hear::Eye:	71	93.4
10	Food:Hunger::Water:	71	93.4
54	Gun:Shoots::Knife:	71	93.4
21	Quarrel:Enemy::Agree:	70	92.1
69	Man:Bread::Cattle:	70	92.1
106	Man:Bread::Horse:	69	90.8
33	Food:Man::Gasoline	67	88.2
32	Biology:Microscope::Astronomy:	66	86.8
88	Boat:Dock::Airplane:	66	86.8
111	Cow:Grass::Hen:	65	85.5
94	Locomotive:Freight car::Tug:	64	84.2
42	Ink:Pen::Paint:	62	81.6
47	Bark:Dog::Roar	60	78.9
102	String:Top::Batteries:	59	77.6
118	Cat:Mouse::Wolf:	59	77.6
61	Drum:Stick::Violin:	54	71.1
80	Muscle:Movement::Stomach:	53	69.7
93	Cat:Bird::Frog:	53	69.7
108	Gymnasium:Health::Library:	53	69.7

89	House:Nails::Dress:	52	68.4
58	Hammer:Nail::Wrench:	48	63.2
136	Skeleton:Body::Law:	47	61.8
139	Liquid:Syphon::Smoke:	45	59.2
137	Solution:Mystery::Learning:	44	57.9
112	Safety valve:Boiler::Fuse:	38	50.0
147	Necklace:Adornment::Medal:	35	46.1
140	Seal:Fish::Bird:	26	34.2

B. CLASS MEMBER - 23 instances

Definitions:

1. One term is a specific instance of the other, more general term.
2. Both terms are instances of a more general class.

Analogy No. in Table 1	Analogy Base	Production of Correct Relationship	
		Frequency	%
13	Biology:Science::Sculpture:	71	93.4
45	Vehicle:Automobile::Weapon:	70	92.1
85	Hydrogen:Gas::Uranium:	66	86.8
134	Man:Tiger::Tiger:	66	86.8
53	Pistol:Rifle::Hatchet:	65	85.5
26	Moon:Earth::Earth:	64	84.2
39	Rose:Plant::Lion:	60	78.9
28	Wolf:Dog::Tiger:	57	75.0
73	Ewe:Ram::Mare:	55	72.4
129	Flea:Horsefly::Minnow:	55	72.4
62	Gander:Goose::Sow:	53	69.7
117	Bird:Eagle::Beast:	52	68.4
142	Cow:Guernsey::Dog:	52	68.4
101	Locomotive:Transportation::Radio:	51	67.1
84	Square:Rectangle::Circle	49	64.5
97	Hummingbird:Eagle::Shrub:	47	61.8
130	Tiger:Feline::Wolf:	46	60.5
75	Prune:Raisin::Plum:	44	57.9
141	City:Village::Army:	41	53.9

78	Red:Blue::Orange:	39	51.3
90	Cat:Dog::Tiger:	22	28.9
64	Bird:Fish::Airplane:	20	26.3
150	Galley:Vessel::Persimmon:	10	13.2

C. PART-WHOLE - 18 instances

Definition:

One term is a part of the other.

Analogy No. in Table 1	Analogy Base	Production of Correct Relationship	
		Frequency	%
8	Second:Minute::Minute:	72	94.7
14	Finger:Hand::Hair:	72	94.7
56	Forest:Tree::Garden:	72	94.7
7	Dresser:Drawer:Bookcase:	71	93.4
17	Handle:Hammer::Knob:	71	93.4
31	Antler:Deer::Tusk:	69	90.8
36	Flower:Bush::Fruit:	69	90.8
52	Book:Chapter::Play:	68	89.5
29	Human being:Arm::Tree:	67	88.2
138	Feather:Hat::Embroidery	65	85.5
37	Horse:Hoof::Man:	64	84.2
40	Coffee:Caffeine::Tobacco	64	84.2
132	Cell:Tissue::Tissue:	62	81.6
55	Week:Month::Day:	60	78.9
34	Paragraph:Sentence::Sentence:	55	72.4
107	Pelt:Squirrel::Rind:	53	69.7
63	Bird:Feathers::Fish:	43	56.6
87	Necklace:Pearls::Chain:	38	50.0

D. CONVERSION - 15 instances

Definition:

One term is made from or is a product of the other.

Analogy No. in Table 1	Analogy Base	Production of Correct Relationship	
		Frequency	%
3	Dime:Silver::Penny:	75	98.7
19	Leather:Calf::Wool	72	94.7
113	Brick:Building::Leather:	68	89.5
38	Sail:Cloth::Oar:	66	86.8
44	Pig:Pork::Steer:	65	85.5
81	Handkerchief:Linen::Dress:	64	84.2
109	Shoe:Leather::Highway:	63	82.9
114	Coke:Coal::Bread:	60	78.9
115	Sand:Glass::Clay:	55	72.4
72	Honey:Milk::Bee:	49	64.5
82	Pulp:Paper::Hemp:	49	64.5
83	Gasoline:Petroleum::Sugar:	42	55.3
121	Cloth:Coat::Gingham:	41	53.9
131	Calf:Shoe::Goose:	40	52.6
127	Iron:Steel::Sand:	35	46.1

E. PROPERTY - 14 instances

Definition:

One term has the property or quality defined by the other.

Analogy No. in Table 1	Analogy Base	Production of Correct Relationship	
		Frequency	%
4	Summer:Heat::Winter:	73	96.1
66	TV:Radio::Visual:	65	85.5
125	Loud:Sound::Hot:	65	85.5
27	Rain:Drop::Snow:	62	81.6
49	Man:Omnivorous::Lion:	57	75.0
128	Cold:Ice::Heat:	57	75.0
43	Green:Emerald::Red:	51	67.1

57	Water:Fluid::Iron:	49	64.5
145	Metropolis:Teeming::Prairie:	47	61.8
76	Lead:Cork::Sink:	46	60.5
116	Tiger:Carnivorous::Horse:	45	59.2
92	Razor:Sharp::Hoe:	39	51.3
110	Bottle:Brittle::Tire:	35	46.1
148	Rubber:Flexibility::Pipe:	23	30.3

F. LOCATION - 2 instances

Definitions:

1. One term is located in, on, or about the other, often or always.
2. One term performs some activity in, on, or about the other, often or always.

<u>Analogy No. in Table 1</u>	<u>Analogy Base</u>	<u>Production of Correct Relationship</u>	
		<u>Frequency</u>	<u>%</u>
105	Tank:Fish::Cage:	73	98.7
65	Butter:Bread::Sugar:	71	93.4
74	Bookcase:Books::Cabinet:	69	90.8
20	Granary:Wheat::Library:	67	88.2
77	Porpoise:Sea::Mole:	67	88.2
35	Hat:Head::Roof:	64	84.2
51	Train:Rails::Automobile:	62	81.6
23	Man:Home::Bird:	60	78.9
68	House:Man::Tree:	57	75.0
119	Gun:Holster::Sword:	56	73.1
79	Tooth:Gum::Eye:	47	61.8
98	Salt:Mine::Marble:	43	56.6

G. PART-WHOLE (FUNCTION) - 11 instances

Definition:

One term is a part of the other and performs a specialized function for it.

Analogy No. in Table I	Analogy Base	Production of Correct Relationship	
		Frequency	%
41	Fin:Fish::Propellor:	73	96.1
46	Man:Skin::Animal:	72	94.7
15	Arm:Elbow::Leg:	71	93.4
22	Fish:Fin::Bird:	61	80.3
96	Door:Hinge::Leg:	55	72.4
59	Fence:Gate::House:	54	71.1
133	Rudder:Ship::Tail:	47	61.8
91	Car:Brakes::Ship:	45	59.2
126	Pistol:Trigger::Motor:	36	47.4
143	Bee:Stinger::Man:	34	44.7
149	Wheel:Tiller::Car:	4	5.3

H. ORDER - 10 instances

Definition:

One term always follows the other in time.

Analogy No. in Table I	Analogy Base	Production of Correct Relationship	
		Frequency	%
30	Calf:Cow::Cub:	74	97.4
1	Infant:Adult::Kitten:	73	96.1
2	Baby:Mother::Kitten:	72	94.7
6	Caterpillar:Butterfly::Tadpole:	70	92.1
70	Tears:Sorrow::Laughter:	66	86.8
48	Seed:Plant::Egg:	61	80.3
50	Chicken:Egg::Plant:	59	77.6
100	Acorn:Oak::Bulb:	41	53.9
122	Coconut:Acorn::Plum:	40	52.6
86	Mare:Filly::King:	26	34.2

I. GROUP - 6 instances

Definition:

One term is a collective term for a group of objects defined by the other term.

<u>Analogy No. in Table 1</u>	<u>Analogy Base</u>	<u>Production of Correct Relationship</u>	
		<u>Frequency</u>	<u>%</u>
11	Wolves:Pack::Cattle:	72	94.7
16	Drift:Snow::Dune:	70	92.1
25	Banana:Bunch::Fish:	69	90.8
60	Horse:Herd::Mountain:	63	82.9
67	Oat:Bushel::Diamond:	48	63.2
103	Sheep:Flock::Star:	45	59.2

J. CAUSE-EFFECT - 5 instances

Definitions:

1. One term causes the other to occur.
2. One term causes something to occur to the other.

<u>Analogy No. in Table 1</u>	<u>Analogy Base</u>	<u>Production of Correct Relationship</u>	
		<u>Frequency</u>	<u>%</u>
120	Success:Joy::Failure:	75	98.7
71	Eat:Fat::Starve:	65	85.5
124	Frost:Flowers::Jealousy	38	50.0
123	Profit:Selling::Fame:	37	48.7
104	Rain:Mud::Drought:	36	47.4

K. ACTION-OBJECT - 3 instances

Definition:

One term is an action and the other is the result or object of that action.

<u>Analogy No. in Table 1</u>	<u>Analogy Base</u>	<u>Production of Correct Relationship</u>	
		<u>Frequency</u>	<u>%</u>
24	Draw:Picture::Sing:	72	94.7
95	Automobile:Manufacture::Home:	44	57.9
99	Play:Toys::Work:	43	56.6

L. ASSOCIATION - 3 instances

Definition:

There is a common, culturally defined association between the terms.

<u>Analogy No. in Table 1</u>	<u>Analogy Base</u>	<u>Production of Correct Relationship</u>	
		<u>Frequency</u>	<u>%</u>
146	Courage:Lion::Speed:	52	68.4
135	Dove:Peace::Beaver:	47	61.8
144	Bulldog:Fox::Tenacity:	30	39.5

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